VOLUME XVII NUMBER 2

THE ELEMENTARY SCHOOL JOURNAL

CONTINUING "THE ELEMENTARY SCHOOL TEACHER"

OCTOBER 1916

EDUCATIONAL NEWS AND EDITORIAL COMMENT

The following is clipped from the *Times* of Akron, Ohio:

Junior High School in Hudson, Ohio

The junior high school of Hudson will take in the upper two grades of what was formerly the graded schools and the first year of the regular high school. The superintendent of schools at Hudson, who has been working on this plan this summer, says it possesses advantages over the older method.

In the first place, the pupils in the junior high school will be promoted by subjects and not by the grades of the entire course. A pupil who fails in arithmetic, for instance, will not be required to take all the subjects of that year over again. Instead, he will be passed in the rest and will only take the arithmetic.

The pupils will get the advantage of specialized teaching in this way. The teachers in the junior high school, as well as in the senior, will teach one subject. They are all college graduates and are thoroughly capable.

Instead of waiting for the ninth year in school to take up a foreign language, the pupils under the junior high-school method will be taught Latin in their seventh year. This is the right time for pupils to be started in a different language, as their minds are more receptive at that period. Algebra will be taught in the eighth year.

The one big advantage in this system is that it bridges the gap that formerly existed between the elementary schools and the high schools. Twenty-five per cent more pupils will stay in school for another year to finish the junior high school.

Athletics will be taught in both schools. In the junior high, the teams will play inter-class games. The third-year pupils will be eligible, however, to

play on the teams of the senior high school, which represents the town in games with out-of-town schools.

Books for Junior High School

The following list of books announced by the superintendent of schools of Quincy, Illinois, gives a concrete idea of the work which is thought to be appropriate for this new division of the school:

Pupils' Books and Supplies	
Elson's Grammar-School Reader, Book III	$ .60
Elson's Grammar-School Reader, Book IV	.60
Manley-Bailey Lessons in English, Book II	.60
Gowdy's Poems for the Study of English	.30
Scott and Denny's Elementary Composition	.80
Gohdes and Buschek's Sprach und Lesebuch	1.00
Smith's Latin Lessons	1.00
Milne's Progressive Arithmetic, Book III	.45
Slaught and Lennes' First Principles of Algebra	1.00
Van Tuyl's Essentials of Business Arithmetic	.75
Gordy's United States History	1.00
Tarr and McMurry's New Geography, Book II	1.10
Caldwell and Eikenberry's General Science	1.00
Palmer Method Manual	.20
Penmanship Paper	
Spelling Tablet	.05
A Good Dictionary	$1.00 to 1.50
Prang's Water-Color Box	.25
Soft Drawing Pencil	.05
Crayon	.05

More Junior High Schools

From Chattanooga, Tennessee, comes the statement that a new building is being put up in which to house a junior high school. The following lengthy letter by Mr. Metcalfe of the *New York Globe* is worth quoting, not because we agree with the spirit of some of his comments, but because he sets forth in this letter many of the major problems of the junior high school:

> Intermediate or junior high schools will be tried in this city next fall and they will be planned to render that service which is best suited to meet the needs of children. Attempts to mummify these schools with wrappings of red tape, fine distinctions as to qualifications of teachers, and entrance tests for admission to second year in high schools have been effectually checked by the board of superintendents. Principals of high schools concerned more with

maintaining the integrity of their own schools than in improving the service the schools render to children in first year grades in high schools, have sought in vain to hedge the junior high school experiment about with restrictions.

They undertook to maintain, before committees of the Board of Education, that, as certain of the work proposed for the intermediate schools was high school work, it should be taught by high school teachers and be subject to high school supervision. But the superintendents refused to see it in that light. "If the work of the ninth school year," they declared, "is in reality high school work, it matters not whether it is done in a high school building or elsewhere, if it is done by competent teachers and done well. The severe line of demarcation between elementary grades and high school grades need not be presistently maintained. Some pupils learn English grammar better after they have begun the study of a foreign inflected language and such study is proposed in the seventh school year. If a pupil is taught, under proper condition, to like 'high school' studies as such, he will be more likely to persist in his studies in high school." The design of the recommendation, they reminded the principals, is to prepare for admission to second year in high school and thereby relieve the high schools of the work by receiving an almost overwhelming number of boys and girls in the first year of high school—only to see them drop by the wayside during the year.

The intermediate school is designed more for the better preparation of pupils for life than for entrance to high school. If the pupils can get the first year high school work within walking distance of home and not be obliged to pay car fare it will be so much the better.

Still intent upon details of organization and concerned more with the school than with the pupil, the principals proposed that principals of the junior high schools be required to have had both high and elementary school experience. While this might be a desirable requirement, the superintendents did not consider it imperative. Some of the most successful high school principals had had only elementary school experience before they were advanced. "College education, together with suitable experience in directing a school, in supervising teachers, and in studying and teaching methods of instruction," they suggested, "would seem to be sufficient to qualify a candidate to act as principal of a ninth year school. Correct methods in pedagogy are common to elementary and high schools alike. The same may be said of ability to make programmes and direct teachers. High school principals at present are not expected to be specialists in all branches taught in high schools. Those who have spent years only in class room instruction in high schools, are not necessarily the best fitted to supervise a large educational institution."

What is even more interesting is the fact that the principals of high schools actually proposed that the high schools be permitted to select those intermediate pupils who should be permitted to enter the sacred confines of the

high school. The selection should be determined by "passing an approved uniform examination in each prepared subject."

The reply of the superintendents was direct: Nothing "could be calculated better to kill the intermediate schools at their beginning. Is it likely that any pupil who could, without examination, be 'certified' into high school by his teacher and principal, as at present, would run the risk of remaining in a ninth year in his intermediate school only to meet such hurdles and obstacles at the end of his ninth year as here proposed? Could not the adequate preparation, examination, and certification of ninth year pupils be left to the supervisors and teachers of the ninth year schools?"

The quoted proposal would be another way of increasing student dropping out.

Principals of high schools find it so hard to get away from the idea that theirs are select academies!

For example, they contended that teachers of ninth-year work should be high school teachers. Yet there should not be in any kind of school the troublesome distinction among the teachers which this proposal suggests. The board of superintendents' recommendations will, no doubt, have to be modified so that licenses and salaries shall be uniform for the same grade or kind of work in intermediate schools. Supervising authorities should be free to place a teacher, licensed for seventh, eighth, and ninth year grades, in any of these grades. A mixing of high school licenses, with elementary school licenses, and both paid under different salary schedules would work badly.

The principals also wanted to limit the experiment to schools composed wholly of classes of the seventh, eighth, and ninth year, and argued that intermediate departments would be "expensive." "Efficient conduct of the work of students of intermediate grade is a problem large enough to engage the whole attention of a principal."

"Limiting the experiment to schools having only the seventh, eighth, and ninth year grades," the superintendents replied, "would mean again widely separated schools of this kind and only a few of them—with consequent long journeys for pupils. The work of the first year high school—aside from the study of biology and a foreign language—differs only slightly from the work of the eighth year in elementary school. The other branches are practically the same, with a slight advance in grade. The equipment for teaching a modern language and for teaching biology is not costly. A teacher of biology in a ninth year grade should also be able to teach physiology and hygiene in lower grades. Teachers of the other subjects in seventh and eighth year grades could also, with economy, teach those subjects in a ninth year grade. The system could be made elastic. Some of our own elementary schools had high school departments for years, and did good work in high school studies. One is now doing this."

The board of superintendents will finally recommend the courses, under the law. The associate city superintendent in charge of high schools is a

member of the board of superintendents. Many of the principals and district superintendents who will be called upon to assist in making courses of study for these schools are former high school teachers, and are now lecturers on education.

Troubles from Patrons

When the Board of Education of Columbus, Ohio, began to organize junior high schools, they encountered another type of difficulty which is concretely exhibited in the following clipping from the *Citizen:*

Resolutions protesting against the plan of the board of education to make a junior high school of the Crestview Building were adopted Thursday evening at a meeting of 200 residents of the Crestview district.

The junior-high plan, say the objectors, would cause great inconvenience to about 300 senior high-school pupils who would be forced to go to North High if the change is made and would necessitate an additional expense to parents of pupils for extra car fare and lunch.

The resolutions also urge the board of education to build wings to the Crestview Building to provide ample room for both elementary- and high-school grades.

The resolutions embody this schedule suggested to relieve congestion and to provide for pupils of all grades at Crestview: 8:00 to 11:00 A.M., major high-school subjects and first to sixth grades; 11:00 A.M. to 1:00 P.M., minor high-school subjects and seventh and eighth grades; 1:00 to 3:30 P.M., grades 1 to 8.

Advertising Lumber in Teachers' Cottages

From time to time the *Journal* becomes a willing party to an advertising scheme. The following letter sent on the letter paper of the National Lumber Manufacturers' Association as an advertising circular is quoted in full:

CIMARRON, KAN.—A privately built teachers' cottage for a public school, a house built of wood, by dealers in wood, is the unique educational institution now being completed here by the co-operative effort of a group of influential citizens, who found a way to cut the red tape of the law, and erect a really pretentious edifice.

In an address at Denver, some months ago, R. S. Kellogg, secretary of the National Lumber Manufacturers' Association, and author of a brochure on the building of cottages for country-school teachers, sent out by the federal bureau of education, gave his reasons for believing that such cottages would solve the problem of keeping efficient teachers in the country schools. C. C. Isely, head of the lumber company of that name of this city, heard the lecture. Here is the way in which he tells of its results:

"After listening to Mr. Kellogg's address I decided it would be a good thing to try out this teachers' cottage proposition in our public schools. As I

happen to be on the school board, we have financed the building of a teachers' home and girls' dormitory in connection with our county school here. Not having any law allowing the promotion of this kind of a building by the district of the county, we have promoted it privately and have now the most ambitious thing of its kind in the state and it is nearing completion.

"It being a lumberman's project, we decided to take the best advantages we can of advertising wood uses and have decided to furnish up various rooms as follows: one in oak, one in fir, one in cypress, one in redwood, one in birch, several of them in yellow pine, finishing wood in different varnish stains to illustrate that part of it. Of course, this is primarily a yellow pine market and we used that wood most generously. We shall probably furnish one room in western white pine also. Our finishing is not going to be very elaborate. We expect to use only these woods in casing, base and interior trimming. We expect to name these rooms Oak Room, Fir Room, Birch Room, etc. We now hope to persuade the manufacturing associations of these various woods to furnish us a framed picture of some scene connected with these various kinds of wood. If the fir scene were framed with fir moulding, for instance, it would be all the more appropriate."

The following clipping from the *Republican* of Bellefontaine, Ohio, is typical of the comments that come from all parts of the country:

Consolidation of Rural Schools

Quietly, steadily, and surely a revolution has been in progress in Logan County's school world and that revolution is Centralization. Eventually, many believe, the little, one-room school house will cease to exist. There are approximately eighty-five one-room schools in this county at the present time. There will be more centralization next year. Within the past five years centralization really has made wonderful advancement in this county. To use the expression of a citizen, "The people are fast realizing that centralization means better education for their boys and girls."

A special election will be held in Washington township, September 25 and the voters will decide whether the schools shall be centralized at Lewistown. It is said that more than half of the voters in this township have signed the petition asking for the election.

In DeGraff and Quincy counties, many pupils from Miami and Pleasant townships will come to the village schools this year. There seems every indication that centralization here will increase. In Lewistown it is hoped to make the high school a first grade high school, probably this year.

There are some who believe that in five years, surely not more than eight or ten, the one-room school will have been eliminated in Logan County.

Infantile Paralysis

The epidemic of infantile paralysis which has aroused the greatest anxiety, especially in New York City and in some of the cities of Pennsylvania, has led to the postponement of the opening of schools in many of the eastern cities. The disease is dreaded for its serious consequences even where it is not fatal. The most extreme precautions against contagion should be taken in every case.

The following description of the disease is given in a circular issued by the Department of Health of New Jersey:

Acute poliomyelitis is an infectious and communicable disease that may be transmitted from sick to healthy individuals by direct contact. Perfectly healthy persons who show no symptoms may harbor and transmit the infective organism to others. Such persons are known as carriers, and probably constitute the most important factor in the spread of the disease.

The virus has been shown to exist in the nose, the mouth, the pharynx and upper air passages, and the intestine of infected persons, and in the dust of a room that has been occupied by an acute case. Evidence of the transmission of the disease by the bite of the *Stomoxys calcitrans* (stable fly) has not been definitely verified. It is quite probable, however, that flies of various species do play a part in the spread of the disease by carrying infective material.

Young children are most frequently affected, but no age is immune. Children between the ages of one and five years are most susceptible. The older the patient the greater the mortality. In some outbreaks about 25 per cent of all cases die, and in others the mortality is from 13 per cent to 16 per cent. In addition, as high as 50 per cent of all persons who recover are incapacitated, owing to permanent paralysis. Two or more cases in the same family are rather unusual, but do occur. One attack generally confers permanent immunity.

The incubation period is believed to vary from three to fourteen days. The average period appears to be about seven days.

The duration of the period of infectivity or contagiousness has not been definitely determined, but experiments on animals have shown that the virus sometimes persists in the nasal mucous membrane for many weeks.

Compulsory Education in Georgia

The following quotation from an editorial in the *Atlanta Journal* describes the new compulsory education law of the state of Georgia:

Judged by its positive virtues rather than its negative limitations, the compulsory school attendance measure passed at the recent session of the legislature is a praiseworthy and serviceable law. Its terms are not as far-reaching or stringent as those prescribed in parts of New England and the West—and wisely so, for if reforms of this character are to be permanent they must be temperate and

gradual. To say, however, that the law is a makeshift or a timid compromise, is wholly unwarranted. As Mercutio remarked at a memorable moment, "'Tis not so wide as a church door nor so deep as a well, but 'twill serve."

The measure provides, in substance, that children between the ages of eight and fourteen shall attend school for not less than four months a year. Exceptions to this requirement apply to those children who have completed the fourth grade of the grammar school, those whose parents or guardians are in destitution, those whose services are needed in farm emergencies, and those who are mentally or physically incapable. Violations of the law are subject to adequate penalties.

Pleas for exemption must be passed upon by the local school authorities. This means, of course, that the law will be enforced better in some communities than in others; but that is true of virtually every law. The encouraging fact, or probability, is that the school authorities will be, as a rule, watchful of the law's integrity and firm against its evasion. This much, at least, will be accomplished: the towns and counties whose public sentiment is awake to educational values and needs will have, as they have not had heretofore, the power and means of putting the public will into effect.

This promises more than one might at first suppose. There are forty Georgia counties which levy a local school tax. All these may be counted upon to enforce the school-attendance law, because they are definitely interested in getting the largest possible return upon their school investment; and their example will leaven surrounding districts. Most of the towns and cities may be counted upon to enforce the law, because in most of them there are organized forces for educational progress. Some counties may be indifferent to their obligation under the new statute, but few, if any, will be antagonistic; and in time the indifference will give way. Hitherto a backward minority could block the plans of the progressive majority. Henceforth the progressive majority can move forward.

The outlook for the compulsory school-attendance law is the more heartening in view of the campaign, inaugurated by the State Department of Education last winter, for the treatment of adult illiteracy. This interesting endeavor, which corresponds in a way to the famous "moonlight schools" of Kentucky, is being promoted in a number of rural districts. Experiment shows that through an hour or two of daily instruction for a period of five or six weeks the ordinary man or woman who has had no school advantages can be taught to read and write and do simple number work. Evening-school sessions for this purpose prove surprisingly popular when they are conducted on tactful and sympathetic lines. By this means three Georgia counties are now being cleared of illiteracy; and that beginning, modest though it is, betokens possibilities which are wonderfully rich.

The removal of illiteracy among adults will reinforce and expedite the prevention of illiteracy among children, which is the object of the compulsory school-attendance law. Supplementing each the other, these two lines of

service will reduce Georgia illiteracy to a minimum or, perhaps, wholly eradicate it in comparatively a few years. Noteworthy in this connection is the fact that the state's percentage of illiterates has decreased from twenty-seven among whites and ninety-five among the negroes in 1870, to seven and eight-tenths among the whites and thirty-three among the negroes in 1910, the latest census year. This much having been accomplished by the public schools through optional attendance, it is not too much to expect that the problem will be solved completely and promptly through compulsory attendance.

Open-Air Schools

The following clipping from the *Sentinel* of Fort Wayne, Indiana, is typical of the steady progress made by the movement for open-air schools:

The committee named by the Anti-Tuberculosis Society of Fort Wayne, which is to select a site for the proposed open-air school, is working hard and will make a selection for the portable building in a few days.

It is the idea of the committee to choose a central location which can be conveniently reached by a street car line. If it is possible they expect to get a vacant lot with an empty house adjoining it. Several places that have been visited are very suitable locations and at a meeting of the committee to be held soon the choice will be made.

The open-air school will not open until a month or five weeks after the public schools have begun. This will give the teachers and physicians time to select the scholars who would be benefited by the open-air school.

The Anti-Tuberculosis Society and the School Board are working hand in hand on this new proposition, which has met with great success in Indianapolis. The society will furnish the building and the School Board will supply the teacher.

Federal Child Labor Law

The Child Labor bill has passed the United States Senate by a vote of 52 to 12. Without debate or record vote, it was accepted by the House with the Senate amendments, and is now a law, having promptly received President Wilson's signature. It represents the results of years of struggle in Congress between forces urging the conservation of child life and those opposing it on many grounds, chiefly that it was a question for the states and not the federal government. It would not have become a law at this session of Congress had not President Wilson, after the Democratic caucus decided to eliminate it from the administration program, visited the capitol and insisted upon its inclusion. As it originally passed

the House it proposed to bar from interstate commerce products on which child labor actually had been employed. As amended by the Senate and now perfected, it prohibits shipment between the states of all products of an establishment which employs child labor. It bars products of any mine or quarry employing chidren under sixteen, and products of any mills, cannery, workshop, factory or manufacturing establishment employing children under fourteen or which employs children between fourteen and sixteen more than eight hours a day, more than six days a week, or earlier than six o'clock in the morning or later than seven o'clock in the evening. It becomes effective one year after the date of the President's approval.

The passage of this law marks one of the great advances in our national program of universal education. Unfortunately the states cannot be relied on to withstand the demands of local influences which are built on exploiting children. Especially have some of the southern states been remiss in matters of this type.

The promotion through federal legislation of a general movement for the betterment of the condition of children is under way in several different directions. It seems not unlikely that the central government of the nation will very shortly be so thoroughly absorbed in educational matters and questions of child welfare that the Bureau of Education will be expanded into a separate department. Already the support of the government is going to agricultural education. It promises to aid vocational education. National laws now protect working children. The government aids all schools and school officers by the most elaborate system of educational reports collected in any country in the world. The final step in this program is to organize a department in which all these interests may be provided for and protected.

EDUCATIONAL WRITINGS

A number of the volumes of the report of the Cleveland survey have appeared during the summer. One of the most important general volumes of the report is that prepared by Dr. Ayres on school organization and administration.[1] The school system of Cleveland has had a very interesting history. It has passed through several epochs in the effort to develop a satisfactory relation between the business management of the school system and the instructorial departments. There was a time when the Cleveland school system was organized in such a way that the director of the schools, who was the business manager, appointed the superintendent. At that time the instructional department was distinctly subordinated to the business organization. Furthermore, from time to time the Board of Education in the city of Cleveland has passed through those stages of political distraction which have been so common among school boards in American cities.

At the present time the school board is entirely free from any suspicion of politics. The division between the business activities of the school system and the instructional activities still maintains, but there is no interdependence between the director and the superintendent. Both are independent officers appointed by the Board.

With this situation before him Dr. Ayres proceeds to give an account of; first, the statutes under which the Board and other school officers operate and, secondly, the business and procedure of the Board. He then gives a detailed analysis of the administrative organization, comments on the purchase of textbooks and the relation of the purchase of textbooks to appointments and Board activities, and, finally, makes a number of recommendations with regard to changes in the existing situation.

[1] *School Organization and Administration.* By Leonard P. Ayres. Cleveland: Survey Committee of the Cleveland Foundation, 1916. Pp. 135.

The business of the Board of Education is transacted at the present time in such a way that the general board meetings pass in detail on practically every item that comes before the Board. The roll is called and a record is made in each case where the Board takes action on financial matters, with the result that the whole time of the Board is absorbed in passing on a great number of petty details. Dr. Ayres has counted up the number of roll-calls and has given an account of the different types of business carried on by the Board. His case seems to be fairly clear that this is not an economical method of transacting business. It would be better for the Board of Education to work out the details of its business through committees and leave time for the general board meeting to discuss matters of broad policy.

Perhaps the most striking part of this report is a discussion of the relation of the Board of Education and the superintendent to the history of the purchase of textbooks. There have been in times past periods when Cleveland has been distracted by school politics. In these cases it has been freely charged and countercharged that book companies were involved in the political situation. Dr. Ayres has brought together tables showing the distribution of purchases of textbooks. These have been correlated with the periods of tenure of office of various superintendents. There is a most striking parallelism between the distribution of book purchases and appointments of superintendents. This does not, of course, prove that the book companies have in any wise interfered with the actions of the Board and it does not prove that the Board has been influenced by book companies; but it does give in a very concrete way the ground for the suspicion often expressed that book companies are connected with the dismissal and appointment of superintendents. Such a discussion as this serves in a very important sense of the word to bring out with clearness the grounds of many of the vague attitudes which people have toward school organization and school politics.

Having made a case, as in the foregoing chapters, to show that the school organization of Cleveland needs careful consideration and possible reconstruction, Dr. Ayres develops in some detail the view that there must be a centralized authority if the work of

the schools is to go forward harmoniously. The centralized authority, he holds, ought to be in the hands of the officer who is in charge of instruction and all that is related to the instructional work of the school.

Dr. Ayres has shown that, in fact, the tendency has been away from this emphasis on instruction. The increase in the expenditures in recent years in the central office has favored very distinctly the business office. Furthermore, it is the business office which originates by all odds the largest number of items of business to be carried before the Board. This preponderance of business and the influence of financial matters in any board organization is natural, in view of the urgent character of financial considerations and in view of the fact that most of the members of the Board are business people and interested in that phase of the school organization; but it must be urged by school people the more vigorously because of this natural tendency to emphasize business that instruction is the chief undertaking of the school and that the whole organization of the school ought to be bent in the direction of improving instruction and supporting it in every possible way.

This handbook on school organization growing out of a careful discussion of a practical situation will be very helpful in molding opinion and in the establishment of better relations between boards of education and school superintendents. A series of studies of this kind worked up in detail and dealing with various cities would ultimately give a basis for a clear, general definition of the relation here under discussion.

A second volume[1] of the report of the Cleveland survey which may be mentioned deals with the garment trades and outlines the social and economic situation of the workers in this field. This volume points out the fact that there has been a rapid growth of this industry and that the development of machinery has created a demand for a certain type of skill which was not required in the early days of the simpler industry. There are a number of shops in Cleveland which manufacture clothing on a large scale. These use a great many workers. The typical workers can be described

[1] *The Garment Trades.* By Edna Bryner. Cleveland: Survey Committee of the Cleveland Foundation, 1916. Pp. 153.

in terms of the general summary, which gives an account of the people who are here concerned:

Machine operating is the largest garment trade. It employs 47 out of every 100 clothing workers. Hand sewing employs 23 out of every 100, while pressing employs 10 and cutting 7. No other industry in Cleveland employs women in such large numbers. In men's clothing factories the ratio of women to men is two to one, while in women's clothing factories it is three to two. The proportion of women is likely to increase on account of the increasing use of the section work system.

Cutting and pressing are performed almost entirely by men; while hand sewing is performed by women. Most designers are men; but there is no valid reason why women should not do this work provided they secure the necessary trade and technical training.

Machine operating, the largest trade, employs two women to each man. The women, as a rule, are engaged in the operating on light-weight materials which require delicacy in handling, and on work which can be learned in a relatively short time; while the men are engaged on heavy materials, and in difficult work which their previous tailoring experience makes easy for them.

Foremanship positions are apportioned between men and women somewhat as the work which is supervised is apportioned between the two sexes. Foremen are in charge of cutting and pressing; forewomen are in charge of finishing and button sewing; while both direct machine operating.

Four-fifths of the men and two-fifths of the women are foreign born and the majority of the native born workers are of foreign parentage. Many hand sewers and most designers are foreign born. There is an increasing demand for workers who know English, as they are able to follow directions more intelligently.

The operation of the Ohio labor laws has helped to bring about a tendency to prefer workers eighteen and over in this industry. A considerable gap is thus created between the time boys and girls leave school and the time they enter the clothing industry.

How far workers of this type engaged in the garment trades can be helped by education is, of course, a serious problem. Again we may quote from the book itself to show how difficult it is to select those phases of these trades that can be dealt with by an educational institution:

Designers learn their work through apprenticeships to custom tailors and cutters and by taking supplementary courses in drafting and grading of patterns in a designing school. Most designers in Cleveland have had training in designing schools in New York or Chicago.

Organized training for machine operating is found, with but few exceptions, only in the largest establishments. There is a general agreement among

employers that it takes a girl who has never operated a machine before about four weeks to learn an easy operation well enough to be taken on at regular piece rates. A much longer time is required to become a first-class worker on a single operation, and to acquire skill in a group of operations takes from one to two years.

Girls are not usually employed as hand sewers unless they know how to do plain sewing. It takes from six months to a year for a girl with this knowledge to learn factory sewing well enough to be regarded as a regular worker.

Cutting has a so-called apprenticeship lasting from two to six years. There is no formal system of instruction. Boys must pick up the trade from observation and practice. Beginners start as errand boys, cloth boys, bundlers, or helpers. To learn the first grade of cutting—canvas cutting—requires from six months to a year; the second grade—lining and trimming cutting—from one year to a year and a half; and the third grade—cloth cutting—from one to three and a half years. Length of apprenticeship depends upon the ability of the boy to learn, the chance he has of getting instruction on the job, and the opportunity given him of getting into the next higher job.

Training for pressing is not usually given. "Boss" pressers, heads of teams of workers, sometimes break in their helpers. It takes about eight weeks for a green hand to become a good seam presser. To become final presser on skirts and dresses requires from six months to a year, and on jackets and cloaks from two to three years.

Examiners learn their work through previous experience in garment making which takes from three to eight years, according to the difficulty of the work.

Trimmers and assorters learn their work acting as helpers to experienced workers. A year or so of experience is required before these workers become responsible in their positions.

Foremen are selected from the working force, or in a few cases, trained especially for their positions. Frequently workers who are competent to be foremen refuse promotion to these positions. Although there are few opportunities each year for advancement to foremanship, employers declare they cannot get enough persons of ability to fill vacancies. Among nearly 200 foremanship positions in 1914 only six vacancies occurred. A study of the previous experience of foremen and forewomen shows that they come from nearly every line of work in the factory and that they may work anywhere from three months to nine years before being advanced to their positions.

The conclusion which is reached by Miss Bryner in this report is that the present work which is given in the schools does not prepare for the garment-making industries. There ought to be something else undertaken which shall prepare those who are going into these trades for more skilful participation in them. The book therefore recommends the establishment of a school

similar to that which has been successfully carried on in the Manhattan Trade School for Girls. There is some possibility of articulating the requirements of a number of these people with the regular school work in the junior high school, but it is desirable for others that there should be a special trade course.

If this conclusion justifies itself in the further development of the school systems of American cities, it promises to be a recommendation of very great importance. Certainly all who are interested in the organization of the regular subjects in the school curriculum ought to take heed of the fact that there is a strong demand for more work of the type that will prepare laborers directly for the tasks which they are to undertake. Either the special trade schools must be established or there must be a radical modification in the work of the regular departments of the ordinary school.

A third volume[1] deals with the household arts and school luncheons, bringing together all of those activities of the school which can be classified under cooking and sewing.

Cleveland began in 1893 to give courses in the domestic arts. The work has been steadily developed, until now Cleveland has in all of the elementary schools this type of work for the girls in the seventh and eighth grades. Much of the work is carried on in so-called centers to which girls come from a number of different schools, but the work is emphasized and is recognized as an important part of the training of the population. The very large foreign element which is to be found in the Cleveland population dictates an emphasis on this sort of training that is not always recognized in cities where the foreign population is less numerous and where the urgent problems of home economy are less obvious than they are in Cleveland.

The book contains an account of the development of this work not only in the elementary schools, but also in the high schools.

With regard to the luncheons, a number of very interesting paragraphs will be found in the report. One paragraph on p. 135

[1] *Household Arts and School Lunches.* By Alice C. Boughton. Cleveland: Survey Committee of the Cleveland Foundation, 1916. Pp. 170.

shows that the school is undertaking in modern times responsibilities that in earlier years were never dreamed of.

Public schools exist for all children and all children must attend school. This places upon the school the burden of caring for all alike. The exceptional child must be especially provided for at meal time because he is blind or crippled and cannot go home for dinner; the open air or under-nourished child, because his parents are too ignorant or too poor to provide a sufficient amount of proper food for him.

These under-nourished children are a menace not only to themselves, but to all other children. When they are exposed to contagious disease, they succumb almost immediately and in proportion as they are under-nourished. The remedy is simple. Food of the right kind in sufficient amounts is largely the treatment for malnutrition.

Provision for exceptional children is neither difficult nor costly when a lunch service is already organized. Blind and crippled children require the same kind of food as do any others, but need additional service—an extra meal, or one served separately. Likewise open air and under-nourished children do not require a special diet. They need more food at shorter intervals with greater emphasis on certain kinds. "Special feeding" cases, which occur infrequently, call in large measure for specified quantities of foods which are on the regular menu, or which can easily be obtained.

The luncheons which are, as a matter of fact, given in the elementary schools of Cleveland are for the most part charity undertakings. Luncheons are provided by private philanthropy for children who are improperly taken care of at home. The high-school luncheon, on the other hand, is regarded as a regular substitute. It is the argument of the author of this report that something of the same sort as that found in the high schools ought to be worked out in a general way for all of the schools of the city. The book gives a very interesting evidence of the growing consciousness on the part of the school of the importance of domestic instruction. Many cities that have not introduced this form of work into their elementary courses would do well to consider the example of Cleveland and follow it, because this type of training is of great importance in the complete education of the girls of a city.

The Wilson brothers have prepared a book[1] on motivation of school work which is the outcome of a large school experience on

[1] *The Motivation of School Work.* By H. B. and G. M. Wilson. Boston: Houghton Mifflin Co., 1916. Pp. 265.

the part of both of the writers. Mr. H. B. Wilson has performed notable service as chairman of the committee of the National Council which has dealt with economy of the school course. His brother, Mr. G. M. Wilson, as superintendent in Connersville, Indiana, made some excellent studies on arithmetic and handwriting which will be remembered by all readers of this *Journal*. Together they have collaborated in a book on the motivation of school work.

Their contention is that the fundamental difficulty with the schools at the present time is that the work in which the schools seek to engage the child is not significant to him. Problems ought to be thought out which will give the child a personal interest in the solutions which the school has to suggest.

We may take at random from any of the chapters a typical example of the way in which these writers would interest the child. For example, out of the chapter on geography we may select the following page:

Creating a real problem.—Under the study of shelter, the gradual advance from the log cabin to the present splendid homes was noted carefully, and then the work and the questions involved in building a house today were taken up. Where is wood obtained? Where was more of it obtained formerly? Why? How was it formerly prepared for use in building? How is it now prepared? What kind of wood was used for building formerly, and at the present time? Notice the rafters and joists in a very old house, and compare with the sawed yellow pine in a new house. Where do we get the yellow pine? What would you see if visiting a lumber camp in Mississippi? Where do we get the red-cedar shingles? What was formerly used? In the same way attention was given to other materials, nails, plaster, glass, etc. The idea here was to create for the pupils a real problem, and to go about solving it in a material way without books and without any mere repetition of what was stated in the books. The wide-awake teacher can imagine with what intense interest the pupils reported their investigations of a very old house, and can realize the gradual growth of appreciation because they were permitted to enjoy the benefits of progress and of other people's work.

The study of fuel led to the realization of the fact that wood was formerly used as the only fuel; that forests were ruthlessly destroyed; that at present there is a scarcity of wood; and that prices are high accordingly. Coal is now the chief fuel of the community. The effort was made to find out about this fuel by visiting coalyards, by making inquiry as to the source of the coal-supply, by making an imaginary trip into the coalfields of West Virginia, by

going down into a coalmine, and possibly by coming to know some of the fellows who worked day after day in mining the coal which was burned in their grates and furnaces. Gas as a fuel was also of interest to them. There was a local gas company in the city. Gas was supplied from wells in a neighboring county. Cost and advantages of gas were noted. It was found to be commonly used for lighting, for cooking, for the bath-heater, and for the grate in the fall and late spring.

This is a typical example of the kind of problem that children are supposed to be interested in under this general scheme of motivation. The practical teacher will find a great collection of similar devices in this book and will undoubtedly be stimulated to introduce into the schoolroom by reading these examples many new problems that will be of interest to children. One cannot help feeling, however, as he reads through the book, that many of the problems will be quite as artificial from the point of view of the children as the problems which are now used in the schools. The fact that they are concrete and interesting to adults does not make it at all certain that the children will see the importance of these problems or seek eagerly for their solution. For example, in the illustration chosen above it does not at all follow that little children are going to be eager to find out how houses are built. The problem does not appeal to a child as one of great personal interest. He finds the house there and he has no real motive for reconstructing it even in imagination.

Furthermore, it seems to the present writer that this book and many of the recent discussions in education fail altogether to realize the fact that children have logical interests. They have a kind of curiosity for a completeness of experience which has always been at the root of all scientific development. Primitive people had this curiosity and tried to satisfy it by all sorts of speculations with regard to the world. In the same way little children have a logical need for explanation. They have intellectual interests that are no less logical than the highest intellectual interests of adults. It is unnecessary to assume that it is the practical world and the practical motive which leads to all sorts of thinking. It is quite as certain that an omission anywhere in experience will lead a child to demand that he be given a complete explanation. In fact, anyone who has associated with children will realize that they

very frequently ask such questions as where they came from. They ask the remotest questions about various parts of the universe with which they have no practical connection whatsoever. Much of our school work can be genuinely motivated by an appeal to this logical demand made by the children for a complete form of knowledge. This book does not emphasize the logical demand. It may be regarded as a book full of practical suggestions for practical applications of knowledge.

One further question is suggested by the statement regarding logical interests. Very frequently a child must master a body of knowledge before he develops the desire to apply it. Many practical problems are virtually problems that presuppose the knowledge which the school assumes that it is teaching. The authors have indeed supplied many practical examples of what children might think about, but they have not always given the details of the preparation necessary for children actually to be brought into contact with these problems.

The book stimulates anyone who reads it to vigorous educational thinking and, whatever may be one's view with regard to the proper motivation of school work, he will find in this volume many interesting and useful devices and much stimulating material.

Professor Starch, who has carried on a great many quantitative experiments in education, has brought together in a single volume[1] a number of the tests which can be used in measuring ability in elementary-school subjects. The standard scales prepared by other authors are reproduced in this volume, and Professor Starch has given very fully those tests which he himself has worked out. The book contains very little descriptive material. Indeed, the novice who undertakes to work with these tests would find it difficult to use the material which is published in this book without some further explanation than is here offered. This statement constitutes, we believe, a serious criticism of the volume. The time is past when a mere recognition of scales and methods of measurement is required in school work. Schoolmen have been

[1] *Educational Measurements*. By Daniel Starch. New York: Macmillan, 1916. Pp. 202.

shown these devices for exact scientific work again and again. Many of them are easily accessible. For example, Mr. Starch reproduces Ayres's spelling scale. Anyone can secure this very readily through the Russell Sage Foundation and it seems hardly necessary to include it again in the publication of another author.

The main trouble at the present time is that many people who are trying to use these measuring devices have not been properly trained to interpret their results or even to apply the tests to school situations. What is needed in a book of educational measurements is, therefore, a careful and discriminating discussion of the methods of using the tests rather than a mere enumeration of these tests or their reproduction.

Indeed, this book contains two or three sets of tests that nobody can use with any degree of profit. For example, the drawing scale which is once more reproduced here has never been productive of any advantageous results. It would be very misleading for anyone who was attempting at the present time to understand the scientific movement in education to be held responsible for any adequate use of this particular scale.

There are a number of very good forms of measurement of the different school activities at the present time. Mr. Starch's work has been made accessible in various publications and the republication of it under a single cover hardly enhances its value. On the other hand, a number of very good scales other than those used by Mr. Starch are now available, and anyone who is going to make school measurements is quite as likely to want the arithmetic material that has been developed in recent surveys or by Mr. Courtis as to utilize Mr. Starch's scales. It is doubful whether the scientific use of scales is greatly aided by a narrow selection.

Finally, the publication of scales in a bound volume is likely to make them very clumsy. They will have to be reproduced if they are used with the children; they cannot be used in the bound form in which they here appear.

By the time one has taken up these various considerations he wonders why the book is published. It is more important at the present time that all sorts of material of this measurement type be made accessible and that the results of applications in careful

school surveys be published so that a comparative body of material may be created which will help the individual worker in making his interpretation. Mr. Starch's volume undoubtedly will have some value in making these scales known, but it is not the type of book that ought to be encouraged at this stage of the measurement movement in public schools.

A volume[1] which suggests a difficult school problem by its title is issued by the Riverside Press under the authorship of Mr. William H. Dooley, principal of the Technical High School at Fall River, Massachusetts. The title of this book is *The Education of the Ne'er-Do-Well*. The problem of the child who cannot succeed with the ordinary course of study is described in the early chapters of this book. He is regarded as the legitimate successor of the boy who in earlier days became an apprentice and learned a trade. In those days it was not demanded that everybody should reach a high level of intellectual life. There was, however, a position made for the boy who, being somewhat dull with books, was nevertheless skilful with his hands. The question is raised in this volume how the modern boy, who would in earlier days have been an apprentice, shall be provided for under the public education system. He needs to be provided for. It must not be required of him that he pursue the same type of intellectual training that is offered to his more brilliant intellectual brother. The course of study must be adapted to his needs.

One chapter of the book gives, by way of answer to this question, some account of the manner in which the effort is made abroad to meet the needs of those who cannot take the academic course in the schools. From this point on American experiments are described in detail. These American experiments are given with the programs and with some account of the way in which these programs have been fitted to the needs of children of exceptional trade ability but of general academic deficiency.

Whenever one lays down a book of this sort he wonders whether it is true that there are young people in the world who could not

[1] *The Education of the Ne'er-Do-Well*. By William H. Dooley. Boston: Houghton Mifflin Co., 1916. Pp. 164.

learn from books if the proper stimulus is offered to them. Would it not be better for us to strive in our school work to bring about that kind of relationship between book learning and hand learning that will make it possible for every child, whatever the character of his intelligence, to make use of science and all of the information that can be collected out of books? There is no such fundamental antithesis, at least in the early days of a child's life, as one finds represented in arguments of this sort. Indeed, one finds many suggestions in this book that the author would agree with a view of this type, because the course of study which is recommended for these children who do not get on in ordinary school work is not at all the kind of unmixed trade course that is sometimes suggested for them. Indeed, here and there emphasis is laid on the academic subjects. These, however, must be modified in their content so as to attract the interest and attention of children of the kind under discussion.

At all events, the problem is a grave one and, however fully we accept the solution which the author gives, we are all coming to be aware of the problem and of the necessity of meeting this problem by some modification of ordinary school organization.

The Binet tests have been so widely used and so much discussed that very little comment will be necessary to introduce Professor Terman's new book[1] dealing with these tests. As the title of his book indicates, these tests measure not the special types of experience which the school aims to cultivate through the teaching of reading, number, and the other particular courses; these tests deal, rather, with general intelligence. They aim to select from the total school population those who are backward in general or precocious. The assumption is that if one does not have intelligence, he does not have the possibilities of cultivating the particular types of knowledge which are necessary in the school subjects. It does not always follow that a child who cannot read is lacking in general intelligence, but it does follow that if a child is lacking in general intelligence, he cannot learn to read. Conversely,

[1] *The Measurement of Intelligence.* By Lewis M. Terman. Houghton Mifflin Co., 1916. Pp. 362.

school work may not utilize to the fullest possible extent the larger powers of the brilliant child. Consequently all school work must be checked by studies of general intelligence. Any defective who does not have this general intelligence should be eliminated from the regular work of the school so as to save the school organization from the necessity of futile efforts to train him in particular subjects. Any forward child should be allowed to progress more rapidly than the average.

Professor Terman has described at length the assumptions which underlie these intelligence tests and has described also the original tests themselves, together with the modifications which have been worked out at Stanford University. He then gives in detail the various tests for the different years, carrying these beyond the years that are provided for in the original Binet tests. There are chapters dealing with tests for the average adult and for the superior adult. The material under each year has been worked over carefully so as to adapt it somewhat better than was the original test material to the years in question. The revisions which have been undertaken have been tried out extensively enough so that the author speaks with a great deal of assurance about the possibility of using these tests in dealing with children of the grades designated in each of them.

THE INTERMEDIATE GRADES AND DEPARTMENTALIZATION. I

DONALD DuSHANE
Superintendent of Schools, Clinton, Indiana

PART I

SECTION I. THE IMPORTANCE OF THE INTERMEDIATE GRADES OVERLOOKED

The intermediate grades, those school years wedged in between the grammar grades or the junior high school and the primary department, wherein are found most of our children between the ages of ten and thirteen, the grades commonly designated as the fourth, fifth, and sixth, have received but scant attention in present-day educational literature.

The belief in the importance of the first several years of school work is attested by the indexes of the National Education Association yearbooks, by the courses offered in the normal departments of our universities, by the widespread employment of primary supervisors, by the amount of space devoted to primary problems by our educational journals, and by the numerous books dealing with such problems. The result of such a belief has been the improvement of primary courses of study and methods of teaching to such an extent that the work of the first three grades in most American cities is well done and is a justifiable source of pride to school authorities.

Likewise the grammar grades have always been deemed to constitute a vitally important period in the development and education of our children. By grammar grades are meant the seventh and eighth. With the popularization of the realization that the early adolescent period must be more fully recognized in school organization and courses of study, and with the development of a country-wide demand for the early beginning of practical training of children as skilled and common laborers by the schools, has come a new interest in the problems of the seventh, eighth, and

ninth grades. As a result, we hear on all sides discussions of the six-and-six plan with the emphasis on the upper six years, of the junior high-school plan, of prevocational education, generally beginning at about the seventh grade; we find numerous experiments being tried, treatises being written, college courses being organized, surveys being made, for the purpose of better adjusting the schools to the needs of the children in these grades. While much has been accomplished, yet the results of this specialization have not been as satisfactory as in the primary grades, mainly because of the greater number and intricacy of the problems involved, but secondarily because, in the opinion of the writer, the great importance of the intermediate grades has been overlooked, and because many of their problems have not been solved nor even widely recognized.

The neglect of the intermediate-grade period.—It is commonly assumed that, given a thorough and skilful handling in the primary grades, school children will go through the intermediate grades without great difficulty, that teachers need not be specially trained for these grades, and that the present course of study is satisfactory so far as the fourth, fifth, and sixth school years are concerned. As a result of these assumptions, but slight attention is being given to the intermediate grades and their problems.

Many school systems put their best teachers either in the grammar grades or in the primary departments, and assign their less able teachers to the intermediate grades where "they can do least harm." Frequently there is a salary discrimination against the intermediate teachers on the theory that less skill and ability are required to train the children of this period successfully.

It is taken for granted that the present intermediate organization is fairly adapted to the needs of the children; the opinion is freely expressed that "we should let well enough alone"; it is held that intermediate problems are of little importance compared with those of the grammar grades and therefore do not deserve much consideration. A person seeking training as an intermediate-grade teacher could, after examination of college catalogues, reasonably come to the conclusion that there are no intermediate-

grade problems distinguishable from those of the other grades, and that such a specialization would be illogical as well as impossible.

SECTION II. A CONSIDERATION OF THE IMPORTANCE OF THE INTERMEDIATE PERIOD

Whether the word "intermediate" as applied to the grades is merely a vague but convenient term or whether it defines a period

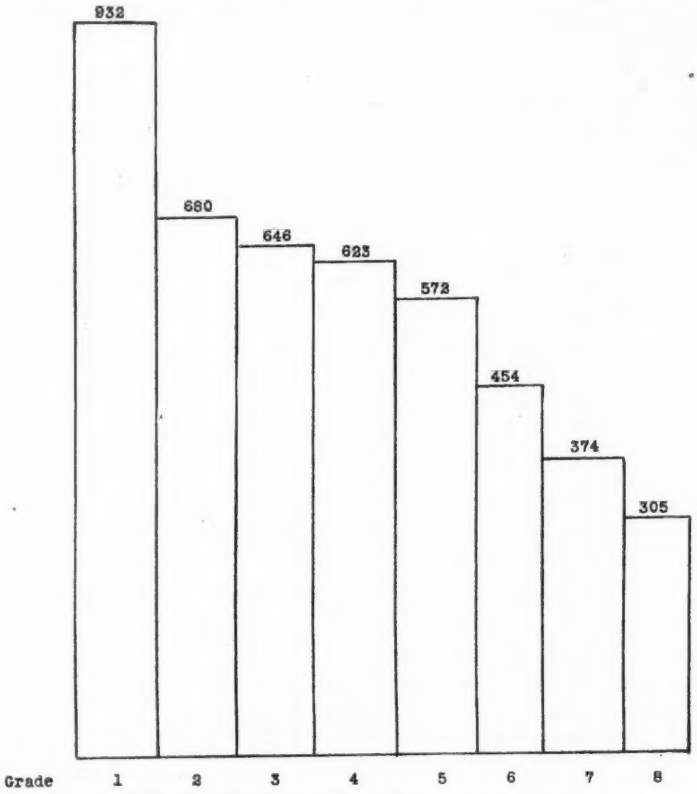

CHART I.—Total enrolment of whites for five years ending May 19, 1916

having distinctive qualities and problems, requiring special school methods and organization, can best be determined by a careful

consideration of the following topics in their relation to the grades under consideration: (*a*) withdrawals from school; (*b*) retardation and compulsory attendance laws; (*c*) differences in social make-up of intermediate grades, grammar grades, and high school; (*d*) pre-adolescence; (*e*) complexity of curriculum, compared with the primary course; (*f*) junior high-school theory and the intermediate grades.

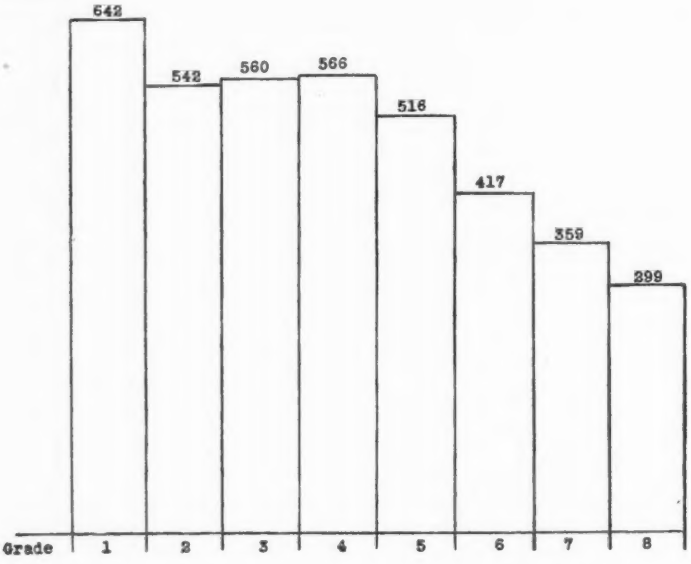

CHART II.—Total white enrolment for five years ending May 19, 1916

a) *Withdrawals from school.*—While the retardation rate is not constant throughout the fourth, fifth, sixth, seventh, and eighth grades, and an increasing population will slightly increase the numbers in the lower grades in comparison with the others, yet the decrease in enrolment from grade to grade will give a dependable though inexact index of withdrawals from school. The primary grades should not be considered, because of the high rate of retardation found therein. In spite of the immensely larger enrolment of the first and second grades, it can correctly be assumed that

practically all children who enter the first grade will eventually enrol in the fourth grade and that withdrawals from school begin in that grade. This is shown in comparison of Chart I, showing the enrolments over a five-year period, with Chart II, covering the same period with corrections made for retardation.

The grade population of a number of the large cities of the Central West, from the *United States Bulletin No. 5*, 1911, Bureau of Education, is shown in Table I.

TABLE I

City	Fourth Grade		Fifth Grade		Sixth Grade		Seventh Grade		Eighth Grade	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Chicago.....	14,742	12,718	13,679	13,027	11,037	10,841	8,761	9,197	6,985	7,810
Indianapolis..	1,539	1,587	1,496	1,510	1,155	1,289	998	1,022	772	777
Detroit.....	2,534	2,411	2,333	2,283	1,858	1,802	1,533	1,503	1,021	1,122
St. Louis.....	4,584	4,297	3,653	3,626	2,679	2,883	2,084	2,292	1,479	1,900
Total....	23,399	22,013	21,161	20,446	16,729	16,815	13,376	13,996	10,257	11,609
Grand Total..	45,412		41,607		33,544		27,372		21,886	

Assuming that withdrawal is not material previous to the fourth grade, then 100 per cent of the entering children in these cities start the work of the fourth grade. Taking 45,412 as 100 per cent, it is safe to say that 90 to 95 per cent of the school population enters the fifth grade, 75 per cent enters the sixth grade, and 50 per cent enters the eighth grade.

Out of every hundred children listed in Table I, it is safe to say that—

5–10 never enter the fifth grade
26 " " " sixth grade
40 " " " seventh grade
50 " " " eighth grade

Out of every hundred boys—

5–10 never enter the fifth grade
30 " " " sixth grade
44 " " " seventh grade
56 " " " eighth grade

Making the same assumptions as were made in considering Table I, it appears that out of every 100 children listed in Table II—

10 never enter the fifth grade
13 " " " sixth grade
30 " " " seventh grade
47 " " " eighth grade

and of the boys—

12 never enter the fifth grade
17 " " " sixth grade
36 " " " seventh grade
53 " " " eighth grade

In Table II are listed the school populations of all Indiana cities under 25,000, found in *United States Bulletin No. 5*, 1911.

TABLE II

Cities	Fourth Grade		Fifth Grade		Sixth Grade		Seventh Grade		Eighth Grade	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Alexandria	47	42	46	44	26	47	21	41	20	31
Bedford	75	79	79	80	89	58	77	71	42	48
Connersville	60	57	46	54	44	56	31	47	36	39
Crawfordsville	68	61	70	69	57	81	60	55	49	48
East Chicago	126	119	59	63	46	65	41	43	29	20
Frankfort	123	99	81	86	85	105	62	86	74	71
Goshen	39	63	72	58	55	70	51	53	32	59
Kokomo	130	162	138	149	110	134	89	101	60	74
LaPorte	71	68	46	45	48	61	39	40	33	42
Lebanon	59	54	38	56	43	45	39	31	26	33
Logansport	153	149	130	118	133	112	119	123	73	84
Michigan City	120	127	138	107	83	77	78	82	45	57
Peru	120	92	94	101	83	80	63	70	41	37
Wabash	114	84	106	84	72	95	62	78	48	66
Total	1,305	1,196	1,142	1,114	1,076	1,087	832	921	608	709
Grand total	2,501		2,257		2,163		1,753		1,317	
Per cent of Fourth-grade enrolment	100	100	87.6	93.1	82.5	90.9	63.8	77.2	46.5	59.2
Total percentage	100		90		86.8		70		52.7	

It is evident that with the beginning of the fourth grade, a new problem appears which has not been present in the primary

grades, namely, permanent withdrawals from school. The possible causes for such withdrawals will be considered later. Discontent with school methods, subject-matter, and restraint first seriously shows itself in the fourth grade; during the intermediate period, 40 per cent of our school children permanently withdraw from school; many of the withdrawals of the seventh grade trace the origin of their causes back to the intermediate grades.

That period in school in which all of our children are enrolled and during which almost half of our future voters and more than half of our laboring class complete their educations, and during which the state has its only effective opportunity to influence them for the public good, can surely rank in importance with the high-school period, for instance, which enrols less than half of our children in the ninth grade and graduates less than one-fifth.

b) *Retardation and attendance laws.*—In elementary schools having a legal withdrawal at the age of fourteen, one year of retardation apparently has little effect on withdrawal. A retardation of two years or more ordinarily carries a fourteen-year-old child no farther than through the fifth grade and gives him a reasonable expectance of one more year in school. His chances of entering the eighth grade are less than one in ten. The intermediate grades have the duty of completing the education of a large proportion of those children who are two or more years retarded. Chart III illustrates this fact.

The lack of active enforcement of attendance laws, an all too common condition, permits the withdrawal during the intermediate grades of many additional children who are under fourteen.

As long as attendance laws remain as they now are, and are enforced as they now are, three-fourths of all elementary withdrawals will continue to occur in the intermediate grades.

c) *Differences in social make-up of intermediate grades, grammar grades, and high school.*—The children of the intermediate grades represent the various industrial and social classes of a city, about in the proportion that they are found in the community. The common labor class will have the largest representation. By the time the seventh grade is reached, a decided change has taken place;

over half of the children of common laborers and one-fourth of the children of skilled laborers will have withdrawn; but there will have been practically no withdrawal of the children of the business and professional classes. In high school, the common labor class is represented by but a small group, generally less than 10 per cent of the total enrolment, and most of them do not progress farther than the first year. The better-paid labor group will have

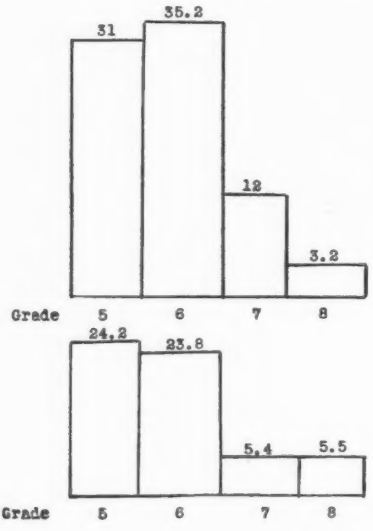
31
35.2
12
3.2
Grade 5 6 7 8
24.2
23.8
5.4
5.5
Grade 5 6 7 8
Boys in Grades 5, 6, 7, and 8
Percentage of retardation of two or more years
A pupil is considered two years retarded if
13 years old in Grade 5
14 " " " " 6
15 " " " " 7
16 " " " " 8
Age was determined by nearest birthday to January 1, 1913
Girls. Explanation same as above

CHART III

a considerably reduced representation, while the business and professional class will be the most numerous.

Charts IV–VI show the differences in the occupational make-up of the intermediate grades, grammar grades, and high school of Madison, Indiana. The occupations of the parents of every child above the fourth grade in this school system were secured and classified under the following headings: common labor, skilled labor, public employees, clerks and bookkeepers, business and professional group, miscellaneous, and no report. Charts IV and V show a comparison of the three largest groups. Chart VI shows

the distribution by grades of the common labor group. The writer made the same tabulations of parental occupations in South Bend, Indiana, several years ago, and obtained the same general results.

The entire population of a school corporation is represented in the primary grades and the intermediate grades, and nowhere else.

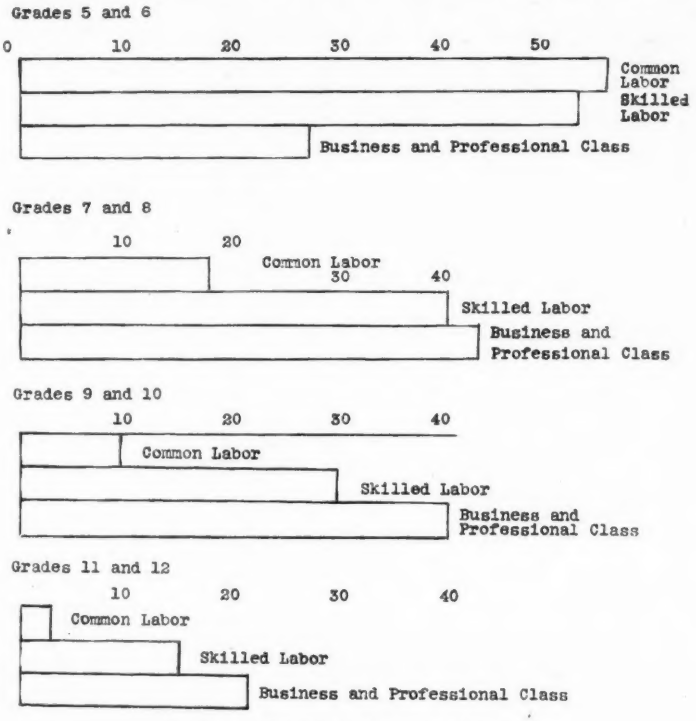

CHART IV.—Occupation of parents, May, 1916

Thereafter, the school becomes less and less democratic. As the work of the primary department is largely a preparation for the intermediate grades, the intermediate department is primarily the finishing school of the common laborer's children. An educational cycle should be made in these grades, giving the children as practical and complete a preparation for life as possible. There is much more

to be accomplished here than merely preparing the children for the grammar grades.

d) *Preadolescence.*—Most primary children are docile, fond of school and teachers, uncritical. At about the fourth grade, the average child begins to assert himself, to become self-conscious, to attempt to think out his individual problems for himself. He

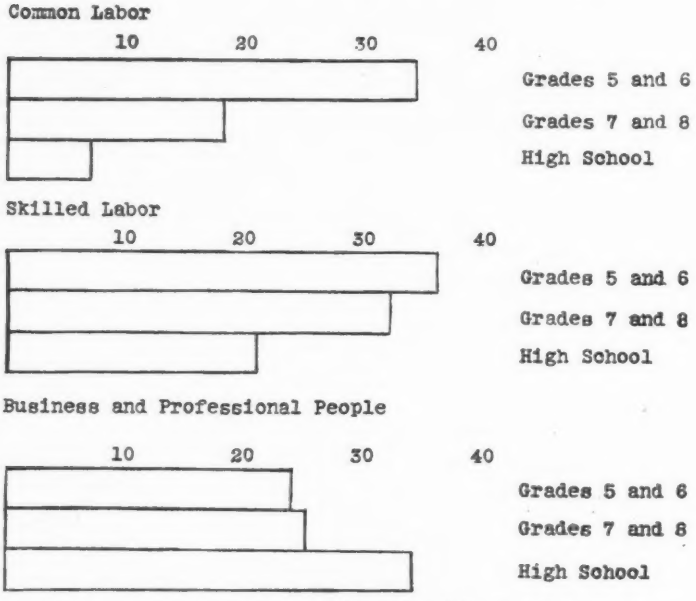

CHART V.—Percentage of common labor, skilled labor, and business and professional people among the parents of each grade group.

becomes more conscious of, and submissive to, the opinions of his playmates and looks to his teachers and parents less and less for guidance. He breaks away from the absolute teacher control of the primary grades and his tendency is to work full-heartedly only for those teachers whom he likes and respects.

He begins to criticize not only himself but others, teachers and parents included. He becomes unpleasantly conscious of the monotony and repetition of school work, and dissatisfied with his

own accomplishments. As a result, beginning with the fourth grade, an increasing number of children become dissatisfied with school and eager to withdraw. Here serious problems of discipline first appear, and the effect of school failure is more depressing and discouraging than in the primary grades.

It is apparent that children undergo a revolutionary change of attitude toward themselves and the world about them at about the age of ten. They enter into what might be called a preadolescent period, characterized by restlessness under restraint, a critical attitude toward self and others, a submissiveness to the control of social groups.

It is to be expected that this change in social and mental attitude, which determines the destiny of many of our school children, should be carefully reckoned with in determining the attitude of school authorities

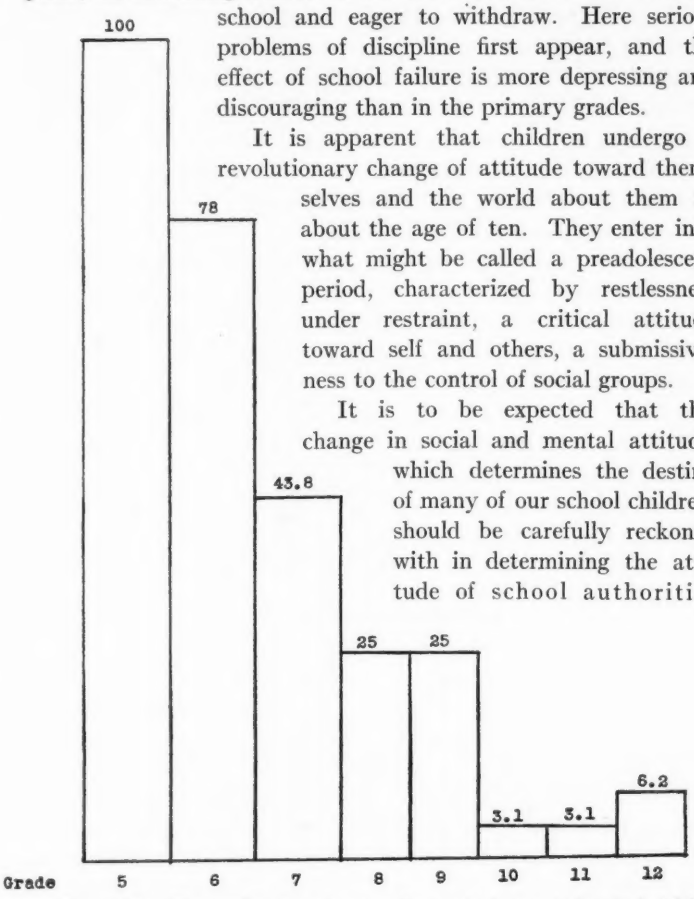

CHART VI.—The number in each succeeding grade for every hundred children of common laborers in the fifth grade.

toward the intermediate grades and should be reflected in the organization of the school.

e) Complexity of curriculum, compared with the primary course.—The main formal work of the first three years of the public school

is, in a broad sense, learning to read. It may be safely said of the first three years that they are largely devoted to preparing for the work of the intermediate grades. The children are immature and in need of sympathy and careful guidance. Where the main school work is, or ought to be, the teaching of reading and the acquiring of a vocabulary, and where there is need of personal guidance, it would probably be best to place the work in charge of one teacher. Her work would be so limited in scope that it should be possible for her to become a specialist.

Beginning generally with the fourth grade it is assumed that the children have mastered the mechanics of reading, and the course of study is so planned that the work of this and the succeeding grades might be called "applied reading." Here appear for the first time formal geography, dictionary study, language, history, hygiene. Arithmetic for the first time assumes a parity with reading. It would seem that such a blossoming forth of school subjects, such an increase in program complexity, would call for a different organization of teaching effort to continue the efficient work of the primary grades. The prevailing practice in the United States is, however, to continue the one-teacher organization, which is so well adapted to the requirements of the primary grades, through the sixth grade at least.

f) *The junior high-school theory and the intermediate grades.*—The junior high-school theory is based on the assumption that the worth-while educational content of the present eight-year elementary course can be covered in six years. However, the advocates of this theory have not fully recognized the need of a reorganization of the intermediate grades or that a study of intermediate-grade problems must first be made before the installing of the junior high school can be justified.

For those children who withdraw from school before the eighth grade, and for those who enter a real Junior High School, there is a necessity for a comprehensive and purposeful course of study for the intermediate grades, having as its object, not a preparation for a higher school, but the giving to all pupils of the basic facts and training needed in a republic for the common training of its citizenship. There is the further necessity of making the work of

these grades thorough and interesting and of putting the children in charge of teachers specially trained and fitted for this important work.

When we find that nearly half of all school children withdraw from school during the intermediate grades, that these children come almost entirely from the labor group, that children whose home conditions are such that withdrawal would do the least harm are the ones who are most likely to remain in school after the legal age is reached, then we may justly conclude that the intermediate grades deserve special consideration and study.

Surely there can be no more important period in our educational system than that period in which it is determined that 50 per cent of all school children shall be withdrawn from school, when it is decided who shall be the drudges and common laborers, who shall be the misfits, the submerged, the poverty-stricken. Here society is given its last chance systematically to influence the character and attitude of her future ignorant voters, of most of her future potential dependents and enemies. If America can become a real democracy through the agency of her public schools, the beginning must be made in the intermediate grades. The work of the primary grades is fairly well done, the high schools are adequately caring for the rather limited class of people they serve, and the problems of the grammar grades, the early adolescent period, are being studied very extensively. It is time that we give thought to the problems of the intermediate grades and that we come to a full realization of the fact that there is none of the school periods that is unimportant, or that can be ignored.

There are vital intermediate-grade problems demanding solution as imperiously as is the problem of the reorganization of the high school. Both the content of the course of study for these years and the plan of organization should be carefully modified to more nearly meet the need of the preadolescent children and especially the need of those children who are soon to withdraw.

SECTION III. DEFECTS OF THE PRESENT INTERMEDIATE PLAN

The prevailing custom in the primary and intermediate grades of American schools is to give each teacher almost entire charge of from thirty to forty-five children of a certain grade and to continue

them under such tutelage for a period of either four and a half or nine months. At the expiration of such a period, all of these children except the failures are placed in charge of another teacher, when the same procedure is repeated.

This plan works fairly well in the primary grades where the children are tractable and the course of study consists, in a broad sense, of only one or two main subjects, although a much better plan could be devised.[1] When, however, the intermediate grades are reached, we find that a teacher has to instruct the children not only in drawing, music, spelling, writing, reading, and arithmetic, as in the primary grades, but also in hygiene, language, history, geography, manual work, nature-study, scientific temperance, dictionary study; we find that she has often two divisions in many of the foregoing subjects, is expected to teach the children how to study, supervise their study periods, make daily assignments for each subject, conduct opening exercises, correct papers, keep detailed record and plan books, fill out numerous reports, keep in touch with the home, supervise recess periods, attend teachers' meetings, and perform other duties assigned her. There is assuredly no time left for her carefully to analyze her problems, nor can she develop special technique in each subject taught, properly supervise study periods, or give individual help to those needing it. It is no wonder that school teaching often becomes a dull routine grind, and that promotion or retardation of pupils is sometimes a matter of mood or convenience.

With such a daily routine, many weeks are consumed before the average teacher can sense the peculiarities and needs of even a majority of her pupils, can establish sympathetic and confidential relationships so necessary in grade teaching. Likewise, there must be a considerable lapse of time before the children can understand the teacher's attitude and intent. After these adjustments are made, an able teacher can make progress in her work in spite of her manifold duties. But, unbelievable as it may sound, no sooner are such good working conditions established than the fortunate,

[1] See *United States Bulletin No. 42*, 1915, "Advancement of the Teacher with the Class."

or shall we say unfortunate, among the children are promoted to another room and another teacher to make new readjustments.

To describe such a system affords sufficient proof of its wastefulness of time and energy on the part of both teacher and pupil. It further offers a possible explanation of some of the retardation and discouragement of children in these grades.

The course of study for these grades is open to serious criticism. Too many subjects are attempted, too few are thoroughly developed. Subjects that could be comprehensively taught in half a year, if allowed sufficient time in the daily program, are diluted, emasculated, stretched over two or three years of the course, because they can be given a time allotment of only a few minutes per week. The course of study is planned on the theory that most of the children will complete the eighth grade, and as a result, in many cities, a majority of the children withdraw from school without having had any instruction in hygiene or civics; in other places, they may have had no United States history or cooking or handwork. There has been no proper evaluation of the various subjects offered, nor has there often been any other theory advanced for placing subjects early or late in the course than that they shall prepare the children for the next grade or school.

The withdrawal of children in great numbers before the seventh grade is completed would seem to demand not only that the subjects taught in the intermediate grades should have a value in themselves without reference to the work of the succeeding years, but that a complete cycle of the most worth-while knowledge should be made during these years so that the withdrawing children shall have the best preparation for life possible during their short school course.

We have no right to assume that the primary and intermediate grades are merely preparatory to the grammar grades. For the sake of these children soon to withdraw, we should so mold the course of study and so organize our teaching force that a certain preparation for citizenship will be completed by the close of the fifth or sixth grade. We must stop placing the less competent teachers in intermediate grades and we must place a higher estimate on the content value of intermediate-grade subjects.

If it is true that a large majority of our common laborers, our convicts, and our paupers have withdrawn from school not later than the seventh grade, it would seem that the high school is not the place where prevocational work is most needed. It further appears that if the condition of the common laborer is to be improved, if the unsocial classes are to be helped through the instrumentality of the school, the most fruitful field for the study and solution of these problems lies in the intermediate grades.

SECTION IV. THE NEEDS OF THE INTERMEDIATE PERIOD

The following reforms are suggested by a careful consideration of the problems of the intermediate-grade period.

1. The course of study should be so reorganized that a child withdrawing at the end of the sixth grade shall have completed an educational cycle which shall include the most practical and beneficial knowledge and acquirements possible in six years, shall have had an opportunity to secure some necessarily general and elementary vocational training; and shall have acquired the habit of hard and continued effort.

2. The teaching method and school organization should be revised (*a*) to better fit the needs and interests of the preadolescent child; (*b*) to prevent the present immense waste of time caused by unnecessary repetition and by lack of understanding between pupil and teacher; (*c*) to give the course of study a cohesiveness and content-value that is at present lacking.

3. Special schools should be established for all normal children in the first six grades who are two or more years retarded, the purpose of which should be (*a*) to remedy the individual educational deficiencies of such children, and (*b*) to provide vocational training for the kind of work which such individuals can hope to secure. These schools should be open to seventh- and eighth-grade pupils who both need and desire such training. Re-entry into regular classes should be permitted and encouraged.

4. Under present conditions, continuation schools, having the same purposes as the special schools mentioned above, should be provided for all working children who have withdrawn from school

before the eighth or ninth year, and should be open to all others who desire and need such instruction.

Because of the prevalent centralized state control of public education, which has resulted, in many cases, in prescribed courses of study and lists of textbooks, there is but little opportunity to experiment with or materially modify the number or character of subjects taught in the intermediate grades. The course of study in these grades will therefore not be further discussed in this paper.

Most of the problems of school organization and method have happily been left to local communities for solution. This makes possible a widespread experimentation in this field and gives assurance of the timely solution of such problems as are adequately brought to the attention of the public-school men of this country. The writer is hopeful, therefore, that the time is near when the tragedy of a school mortality of 50 per cent below the eighth grade will be deeply enough felt to secure a more purposeful school training of this important group of future American citizens.

In the following pages is a description, at some length, of the reorganization of the intermediate grades of a small school system. The writer does not claim to have cleared away the difficulties presented by the intermediate grades, nor to have compounded a remedy for the ills of the Republic, but the hope is expressed that the experiments, if they may be so called, will be of interest and that, because of them, others interested in the same problems may be led to develop an adequate solution.

SCALES FOR READING VOCABULARY OF PRIMARY CHILDREN

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University of Minnesota

In the Fourteenth Yearbook of the National Society for the Study of Education,[1] Superintendent Robinson G. Jones proposed a standard minimum vocabulary for primary reading. He further proposed a "standard test" based on this minimum vocabulary. The test consists of two sets of words, 118 "phonetic" and 236 "sight." Each of these sets of words is printed on a card in columns, long-primer type being used. The pupil is tested by being given the card from which he is asked to pronounce the words. The tester notes on a score card each error. The child is scored by a method to be discussed later, each misspelled word being valued by the number of times it occurs in ten primers. In Table I the record for a part of each of two classes for a part of the test is shown. The zeros indicate words missed.

In January, 1916, the complete test was used under the writer's direction in a number of primary grades (I to III) of the Minneapolis schools and in the training school of one of the Wisconsin state normal schools. The tests were given by the teachers of the several classes who were, at the time, members of the writer's course in educational diagnosis at the University of Minnesota. These teachers at the time had spent a semester studying and giving educational tests and were alive to the necessary experimental conditions that should surround the test. Very specific and oft-repeated directions, both oral and written, were given before the tests were made. The purpose of the test was only secondarily to measure the individuals, classes, or teachers; primarily, it was intended to determine the relative difficulty of the several words of the test. The teachers understood it in this way.

[1] Part I (1915), pp. 39–43.

In all, about 700 children were tested, the larger part of these being in Grade IB. The results were brought together, tabulated, and the percentage of error on each word was determined. On the basis of the percentage of error, the words were arranged in scaled

TABLE I

FIRST GRADE

		SCHOOL A										SCHOOL B									
		Pupil										Pupil									
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
186	tell															o					
395	hen																				
4	mend						o								o				o		
4	begs																		o		
6	best		o							o				o					o		
34	dress																				
128	read														o				o		
17	feel		o				o			o								o			
204	beat		o				o			o						o	o	o	o		
65	dear																o	o	o		
25	been															o	o	o	o		
1,101	bit																o				
611	still																		o	o	
132	hid		o			o													o		
138	bring																	o	o	o	

groups, the phonetic and sight lists being kept distinct. We thus have two vocabulary scales ranging in difficulty over a series of nine steps for the phonetic words and twelve steps for the sight words. These scales are here appended.

SCALE D

Phonetic

Line

45. up home

50. bit cow that out fox would

55. stay ran ill gun like meat ring cut time seed more

60. pin ball corn swim weep saw ask week meet room

65. hand hot ten must name head cold duck song walk dance deer hole feel joke

70. shake blow hem hop hear fine past sum fire brave late dress air barn mice glass rose jam

75. dig sled yet trick toy spell frog sent match clap drive find fight flock lad boat sink bank pull dark dish cart charm skip turn bone sale beg teach
80. brook lid sack grade pride sound rain Rob queen boot roar pail high bar rub cries load
85. crown chew kite snag lace slope rang care nob

SCALE D

Sight

45. the war for fly wee I to you said of is a my see do he we are go so
50. come who one she on they away give two help some tree be
55. good your pretty yes too house milk please garden over from by us any bee I'll I'm
60. have me with this his oh mother very girl over where going if door
65. here has her bird put there no as three shall why basket again flour hungry wolf off brother once window carried these cheese
70. baby what mouse pussy water roll children turkey cry laugh good-by city after began voice their live egg poor many buy free much along soon other county gone happy
75. mamma blue want next wool rabbit sister were great dolly half field soldier squirrel ha eyes dry river every winter first afraid
80. our horse father won't papa bear baa school warm love loaves pony almost lamb middle-sized goose beautiful party owl left Santa Claus bowl hurt
85. bumblebees lion monkey cradle naughty visit caught wagon butcher birthday meadow honey pansy elephant pocket friend
90. oranges daisies iron nibble gobble wash cabbage medal
95. hurrah pigeon circus picnic pieces
100. women

It is interesting to note that certain words partly learned in the first semester persist as problems on into the other grades. *Laugh*, for example, was known to 73.5 of IB children, but to only 69.2 of IA pupils and only 97 per cent of the IIA's. *This* tripped 14.5 per cent of the IB's, but also 6.6 per cent of the IIIB's. *Middle-sized* scored percentages of error for the several half-grades of 34.5,

40, 20, 26, 16, and 3. Certain pairs of words behave very much alike. The following table shows a number of these.

TABLE II

PERCENTAGE OF ERROR

GRADE	PERCENTAGE OF ERROR					
	IB	IA	IIB	IIA	IIIB	IIIA
Words:						
laugh	36.5	30.8	1.13	3.1	.....	.....
goodbye	35.5	16.1	1.13	5.5	.....	.....
chew	66.6	26.6	13.7	16.5	9.3	9.1
kite	57.1	23.2	13.7	17.6	16.6	16.1
mother	21.5	5.7	00.0	1.6	00.0	3.7
over	.9	5.7	00.0	1.6	1.3	3.7

The steps[1] on these scales are about 0.3 P.E. which is smaller than necessary for measuring purposes. In practice it is recommended that only alternate steps be used. The selection of words in the following sub-scales, it is thought, will serve practically as well for the testing of an individual or a class as the more complete scales given above.

SCALE D_1

Phonetic

Line

50. bit cow that out fox
55. stay ran gun like meat
65. hand ten name head cold
75. yet trick toy frog find
85. crown chew kite snag lace

SCALE DD_1

Sight

50. come who one she on
55. your pretty yes too house
65. here has bird put shall
75. mamma blue next wood rabbit
85. lion monkey cradle naughty visit
95. hurrah pigeon circus picnic pieces

[1] Cf. M. E. Haggerty *The Ability to Read: Its Measurement and Some Conditions Determining,* Indiana University Bulletin. In press.

The evident advantage of the D_1 and DD_1 scales is the great saving of time in testing. A single pupil may be adequately tested with both scales in two or three minutes and an entire class of 25 in approximately an hour. The test also obviates the danger from fatigue and distraction of attention on the part of the child when a long test is given.

In using the scales[1] for testing purposes the words are printed on a card in columns. This card is handed to the pupil and he is asked to name the words of the first group. When this is done he is asked to name the second group and so on until the words of each line are passed. When the phonetic test has been completed the sight test is given. The errors and omissions are recorded on a specially prepared form. In scoring, a pupil is credited with the highest numbered line in which he achieves but one error or omission. A class is credited with the line in which there is 20 per cent of error. Where no line gives exactly 20 per cent of error, the exact score may be calculated with the help of a table[2] based on P.E. values in a normal distribution.

How well the scale works may be seen from the results obtained with a class of thirty-five children sixteen weeks after their entrance to school. The facts are shown in Table III.

TABLE III

Line	Scales	
	D_1	DD_1
50	26	18
55	30	29
65	58	60
75	90	75
85	95	98
95	.....	98

The figures under D_1 and DD_1 represent the percentage of error for the phonetic and sight scales respectively. The scale nature of

[1] These scales are now printed and for sale by the Northwestern School Supply Co., Minneapolis, Minn.

[2] E. L. Thorndike, *Teachers College Record*, XVI, 42–43.

the test is evident from the fact of increasing percentages of error for the upper lines. Considering the small number of cases involved, the ratios are surprisingly near what the scale demands. Calculating the class scores by means of the aforesaid table we find the class rating on scale D_1 to be 47 and on scale DD_1 to be 51.1.

Whether or not these words will maintain the same scale values in further testing will depend chiefly upon whether the children to be tested have met these words and phonograms in their reading the same number of times as had the children from whom these scale values were derived.

Other forces than mere repetition are, to be sure, active. The size of the word, whether it is a very short word like *is* or *to*, or a very long word like *sunflower;* the shape of the word, whether it has letters all of one height or whether it is broken by *p*'s, *g*'s, *h*'s, etc.; the rich mental content brought up by a word like *bee* or the lack of it attending a word like *county;* the relation which a word bears to the speaking vocabulary of an individual, whether it names a familiar object like *dog* or a remote idea like *charm;* whether it is intimately related to one's interests as *ball* is to a boy's play or only remotely as is the word *think;* the lapse of time since seeing the word, the kind of type and the place on the page in which the child is accustomed to see it—all these factors bear upon the rate and permanency of the child's learning. The necessity for repetition remains, however, no matter what the influence of the other factors, and it is theoretically possible to determine approximately the number of such repetitions necessary for the learning of any word.

How great is the relation between number of repetitions and efficiency of vocabulary is shown by certain correlation figures. These have been figured for three kinds of words. For all words (exclusive of nouns, pronouns, and attributive verbs) yielding 25 per cent or less of error, the coefficient is 0.87. For the attributive verbs and nouns in the same region of difficulty, both small groups of words, figures are respectively 0.47 and 0.40. In a general way, our study shows what the number of necessary repetitions for stable learning is. Of all the words in the sight list yielding 2 per cent or less of error only two occurred less than 500

times. These two are *me* and *of* with frequency indices of 482 and 497 respectively. Five hundred repetitions seem very great, especially when we consider that for every recurrence in the text such words received additional oral drill. When you turn to the words with lower frequencies, however, the percentage of error increases very rapidly. At the lower limit with *bumblebees*, *cradle*, *pony*, *pansy*, and *elephant*, whose frequencies are 4, 10, 3, 3, and 14, we have 75 per cent of error, and *hurrah* with 4 occurrences and *circus* with 3 scored 90 per cent.

We may roughly describe three stages in which words exist in an individual's mind. Let us designate these conditions as *well known*, *barely known*, and *vaguely recognized*. In every mind which can read at all there are some words of each sort. The group of *well-known* words may be large or small but in any case they are secure. They are the ones which the individual has vastly "over-learned." They have been repeated so often that further exercise upon them does not increase their stability, and continued practice constitutes wasted effort in the process of learning to read. Such words are *the*, *and*, *to*, and *is*, for all normal children who have been to school one semester. For such words learning is essentially complete. They are a sure possession and are ready tools in the acquisition of knowledge and enjoyment from printed pages. The mechanics of reading may be said to be mastered in so far as a wide range of words can be reduced to such a state of automatism.

Quite remote from this is the state in which a word wakens a sense of familiarity but no satisfactorily definite reaction. Instance words on a first or second recurrence. From this condition to that of efficient automatism is a long road and somewhere on the route the words pass through a stage that may be described as that of *bare learning*. Such words have been clearly recognized once or twice but slip away with an interval of time. The development of efficiency in reading impinges upon words in just this stage of acquisition. A child may worry through a sentence by concentrating upon words, lengthening out the time, mustering his phonetic aids, attempting words and suffering the teacher's correction, but such work is not a mastery of reading technique. The path to mastery is to reduce the words to automatism, to develop the

neuro-muscular mechanism so that the appropriate vocal utterance or other reaction is immediately incident to the sight of the word. Now, the most effective tool for the development of such mastery is repetition of the word in the individual's experience. *Exercise* is the instrument which lifts words from the region of the vaguely recognized to that of the barely known and from this twilight zone to the secure automatism characteristic of the efficient reader. The task of giving this exercise under proper conditions and to a sufficient degree is the crucial point in developing ability in vocabulary.

In the process of developing this mastery of reading technique words must be more than learned, if by learning we mean that degree of acquisition which enables the learner barely to recognize and speak the word on the occasion of its recurrence. Practice must go beyond the point of mere reproduction because we know that neural or mental bonds will deteriorate with lapse of time. The individual must be insured against decay, and this insurance is gained by what at the time is superfluous exercise. Exercise must go beyond the point of barely forming the bond. The bonds must be "overlearned."

Now, just what degree of exercise, just what number of repetitions is required to bring any word to any stage of efficiency is known only in the vaguest way. In the program of reading laid down for the IB class in the Minneapolis schools[1] the word *the*[2] occurs 5,129 times, doubtless many times the number required to master it. On the other hand, the word *picnic* appears but 4 times, too few, as our records show, for adequate mastery. Where between these wide extremes is the correct measure for the bare learning and the efficient acquisition of a word we are not able to say.

Some little light may be thrown upon the point by the behavior of the five words, *baby*, *rabbit*, *great*, *field*, and *first*. Each of these words was missed by 49 per cent of all the IB Minneapolis children

[1] From an unpublished study by Principal Frederick L. Whitney.

[2] This high frequency is, of course, due to the fact that *the* is so essential an instrument in the reading of other words. No one believes it must occur so often in order to be learned.

in our study and properly pronounced by 51 per cent. The frequency of these words is as follows: 151, 117, 78, 78, 37. If being missed by one-half of 189 children is equivalent to being missed by all of the children one-half of the time, we would have here the number of repetitions required to produce *bare learning* of these words on the part of these children.

It may not be out of place to call attention to what seems to the writer a fallacious method of grading used by Jones. He makes the amount of error of a child in missing a particular word relative to the number of times that word has occurred in his reading. Similarly, that teacher is less efficient if her pupils miss the more frequently occurring words. He says, "It is a greater error to miss the word 'man' which has a recurrent value of 622 than it is to miss the word 'cap' which has a recurrent value of only 104."

Just why this should be so, Mr. Jones does not state. So far as the writer can see, the validity of such a method must rest upon one of two assumption. It might be correct to penalize a child 622 points for missing the word "man" and only 104 for missing the word "cap" if the coefficient of one's vocabulary were directly proportional to the number of times he had seen the word. Or it might be considered a more serious deficiency not to know "man" because in the future he would meet it much more frequently and, therefore, his deficiency would appear to plague him more often. The latter alternative can hardly be in mind, because the frequencies given are not for the number of times the word is yet to be experienced. They refer only to what has been. Probably the first assumption is, therefore, the one upon which the method is based, but for the words in Mr. Jones's list, this assumption is far from true. Our test shows that the children knew *be* as well as *who* but the frequency of the former is 122 and of the latter is 111. *The*, with a frequency of 5,129, was just as well known and no better than *too* with a frequency of 142. If the proposed method of scoring were to be applied with any degree of accuracy, we should have to know the exact number of repetitions required to learn every word used in the test. This we do not know. The figures given represent frequencies far too few for many of the words; for others

the amount of "overlearning" is so great that the number of frequencies is out of all proportion to the result. We should also have to know whether the child in question had met the word approximately that number of times. This we might assume if we knew the books studied and the general method followed.

With the scale as worked out in this paper, however, the method becomes superfluous, and its evident fallacy should cause it to be discarded.

MEASURING TIDAL MEMORY CONTENT

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We are told that less than 10 per cent of the capacity of the lungs is disturbed during the process of inhalation and exhalation, and that there is a large residuum which remains constant. The analogy falls down if carried too far, but is there not a mass of memory material which child mind retains quite permanently and another portion which comes and goes with equal freedom?

The material given in the following tables and charts represents an attempt (1) to state in objective terms the fact that children invariably "know something" of every unit of knowledge before they come into contact with it in formal school work, and (2) to measure roughly the permanent deposit and the fluctuating material in memory content. No claim is made that the method of computation used is perfect, nor that the results and conclusions are final. The discussion will be confined to a brief interpretation of the charts and tables given, and any conclusions will be in the interrogative form.

Table I gives the results in terms of percentages of two fact tests given in one of the Minneapolis summer schools. The terms "Minimum Essentials" is probably a misnomer, as there is no general agreement yet as to just what constitutes the minimum essentials necessary in any subject of study. The teachers were asked to make lists of short questions which they thought would fairly cover the most important facts dealt with in the subjects indicated in the table. In reading, however, the figures given express judgments made on the basis of comprehension as shown through oral interpretation. The "Double Promotion" groups dealt with advanced work in the grades to which the pupils had been promoted in June. The "Make-Up" pupils studied specific subjects in which they had failed to do creditable work during the second semester of the school year. The figures in the "Grand

TABLE I

SIMMONS SUMMER SCHOOL, MINNEAPOLIS

June 21 to August 13, 1915

DEPARTMENTAL GROUP, DOUBLE PROMOTION (EIGHT WEEKS)

Room	Grade	English	Geography	Arithmetic	History	Average Percentage of Increase
A	8A	15–80–65	18–84–67	0–79–79	23–95–72	71
B	8B	17–85–68	25–81–56	16–90–74	21–81–60	65
C	7A	12–84–72	26–88–62	2–84–82	26–98–72	72
D	7B	2–85–83	24–88–64	29–85–55	26–98–72	69
Averages		15–83–68	22–82–60	20–84–64	24–93–69	

Grand average 20–88–68

DOUBLE PROMOTION BELOW SEVENTH GRADE (EIGHT WEEKS)

Room	Grade	Arithmetic	History	Geography	English	Spelling	Reading	
H	6A	31–73–42	35–70–35	31–84–53	45–78–33	.....	.....	41
G	6B	10–90–80	4–93–89	4–84–80	6–94–88	.....	.....	84
I	5A	16–89–73	12–93–81	27–86–59	36–86–50	.....	.....	66
K	5B	27–80–53	.....	14–87–73	46–89–43	.....	.....	56
N	4A	25–84–59	.....	.....	52–90–38	35–83–48	79–91–12	40
V	4B	23–100–77	.....	.....	38–97–59	35–98–63	53–91–38	59
S	3A	28–87–59	.....	.....	20–83–63	55–97–42	30–97–67	58
R	3B	30–82–52	.....	.....	27–80–53	48–86–38	28–87–59	51
Averages		23–86–63	17–85–68	18–83–65	33–87–54	43–91–48	47–91–44	

Grand average 31–87–56

MAKE-UP GROUPS (SIX WEEKS)

Room	Grade	Arithmetic	History	Geography	English	Spelling	Reading	
E	8B	33–87–54	41–63–22	47–76–29	16–71–55	.....	.....	40
F	7A	42–77–35	47–79–32	50–79–29	43–86–43	.....	.....	35
F	7B	22–51–29	24–76–52	29–88–59	32–71–39	.....	.....	45
H	6A	38–86–48	38–77–39	24–84–60	39–71–32	.....	.....	45
I	6B	51–80–29	24–80–56	40–82–42	47–81–34	.....	.....	40
G	6B	16–86–70	14–89–75	22–90–68	31–92–61	.....	.....	68
L	6B	19–59–40	33–54–21	13–60–53	37–54–17	.....	.....	34
J	5A	42–70–28	21–87–66	51–84–33	44–83–39	.....	.....	42
L	5B	22–65–43	.....	15–63–48	20–67–47	14–81–67	.....	51
M	4A	26–75–51	.....	.....	61–87–26	42–89–47	72–85–13	34
N	4A	17–60–43	.....	.....	44–76–32	21–89–68	76–85– 9	38
O	4B	42–90–48	.....	.....	52–52– 0	55–98–43	68–85–17	26
U	4B	30–83–53	.....	.....	31–71–40	59–89–30	45–77–32	38
O	3A	27–92–65	.....	.....	40–40– 0	31–98–67	58–85–27	39
R	3B	35–96–61	.....	.....	.....	38–53–15	70–85–15	31
S	3B	36–74–38	.....	.....	.....	23–76–53	38–76–38	43
Averages		31–77–46	30–76–46	32–78–46	38–71–33	35–78–43	61–77–16	

Grand average 38–75–37

GRAND AVERAGES

Departmental group (double promotion)	20–88–68
Double promotion below seventh grade	31–87–56
Make-up groups	38–75–37
School averages	30–83–53

MINIMUM ESSENTIAL CONTENT TESTS: First number, first test given first week; second number, second test given last week; third number, percentage of increase. The numbers are room averages.

Averages" are interesting. Do they mean (1) that in taking up new work the average class already knows from 20 per cent to 30 per cent of what they are about to study, (2) that in review work the figure is 40 per cent, and (3) that in general pupils already have about one-third of the facts we are about to teach them, when a new unit in the course is started? Here at least is food for

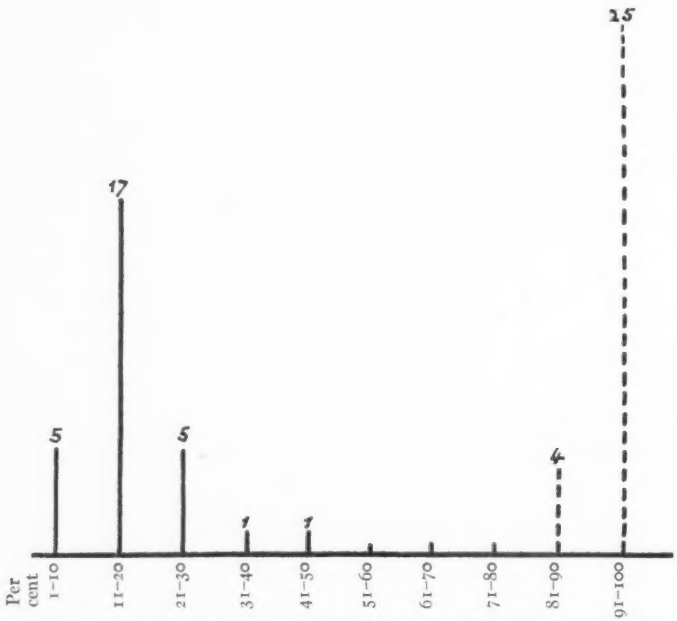

CHART I.—Nine weeks' drill in geography content with twenty-nine 5A pupils—Room "L."

Solid line = First result. Median = 15 per cent. Range = 6 to 45 per cent.
Dotted line = Second result. Median = 97 per cent. Range = 83 to 100 per cent.

thought, and the teacher who has not yet formed the habit of methodically connecting the new with the old should revise her methods.

Charts I, II, and III give a rough measurement of knowledge of geography facts in two 5A rooms in the Monroe Elementary

School, Minneapolis. About ten weeks before the close of the second semester of the school year the teachers in these two rooms were asked if they would like to make out a list of questions covering the facts to be presented in their geography classes during the remainder of the semester. Two long lists were presented, containing material about which the teachers said the children knew nothing. But this opinion was revised after giving the first test.

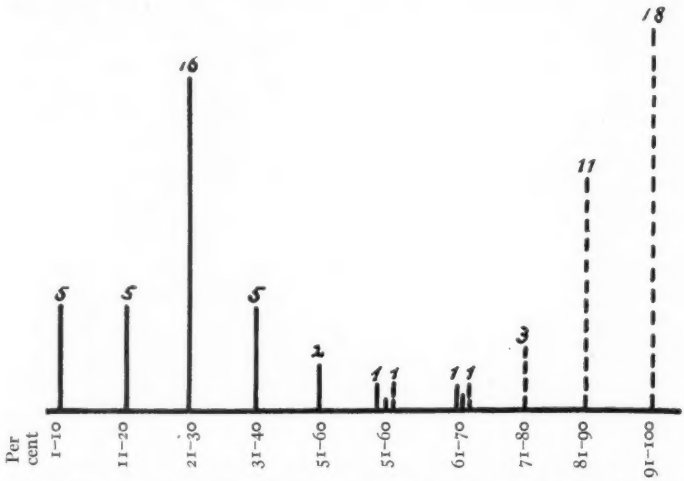

CHART II.—Nine weeks' drill in geographic content with thirty-five pupils—Room "K."

Solid line = First result. Median = 26 per cent. Range = 7 to 63 per cent.
Dotted line = Second result. Median = 91 per cent. Range = 57 to 100 per cent.

Chart I should be read as indicating that five pupils knew from 1 per cent to 10 per cent of the questions asked in the first test; 17 pupils knew from 11 per cent to 20 per cent, etc. There was an actual range of knowledge from 6 per cent to 45 per cent, and the median was 15 per cent. At the second test in Room "L" after nine weeks' study the range was only 83 per cent to 100 per cent, and the median as high as 97 per cent.

Chart II gives similar results from Room "K." Chart III compares the two rooms on the basis of their improvement after

nine weeks' study. It is very plainly seen that Room "L" has done better than Room "K," (1) because the median of increase is higher by 17 per cent, and (2) because the range is less by 37 per cent; for uniformity is desirable in the acquisition of memory facts. Two plus two can never be anything but four.

Do these three charts show that pupils know on the average of 15 per cent to 28 per cent of fifth-grade geography facts before they are presented in class? It will be noticed from Table I that the initial content number for double promotion geography work is

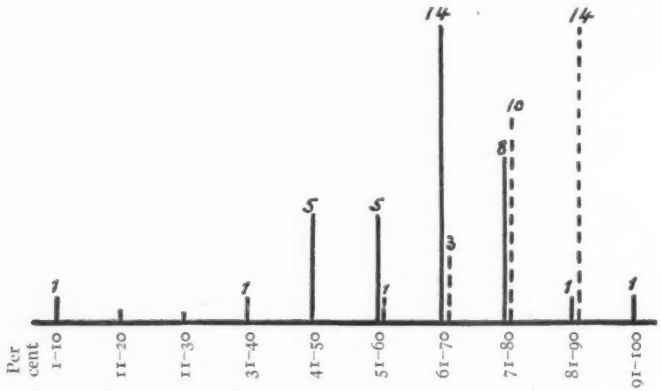

CHART III.—Nine weeks' increase in geography content
Solid line = Room "K." Median = 64 per cent. Range = 15 to 86 per cent.
Dotted line = Room "L." Median = 81 per cent. Range = 55 to 92 per cent.

from 18 per cent to 22 per cent and in make-up work 32 per cent. Is this confirmation or chance? At least, is there not again a lesson which should result in the invariable recognition and use of apperception masses in giving the children credit for what they already know in terms of definite attitudes and practices and carefully selected curricula which shall be valuable from the standpoint of the known advancement and needs of individual pupils?

Table II and Chart II present an attempt to measure, not initial content, but increase in power to use facts through drill

which firmly welds associations already pretty well established. A room of forty-five 2A children was used during the latter part of the second semester of the school year. Twenty of them had been studying the number combinations since the preceding September; about a dozen began them the preceding January; and a few had come into the group by transfer later. At the time the first test was given, it was said that all of the pupils knew the forty-five combinations, and the result of the test proved that this was

TABLE II

THE MONROE ELEMENTARY SCHOOL

MINNEAPOLIS

Seconds	Seconds
33–59–87–117	17–51–64–88
36–59–88	27–52–66–89
38–61–88	27–53–67
41–66–90	35–54–67
43–71–90	40–54–68
46–72–92	40–54–68
47–74–93	41–55–68
47–75–93	41–55–68
49–76–93	45–57–69
52–76–95	47–57–70
52–77–100	47–59–73
54–77–101	49–59–76
54–80–105	49–59–77
55–81–113	49–60–80
57–83–117	50–64–84
First Test	Second Test
Median 76 seconds	Median 57 seconds
Range 33 to 117 seconds	Range 27 to 89 seconds

Ten days' improvement in the forty-five number combinations.
Forty-seven 2A children.

true. One child repeated them in 33 seconds, one in 36 seconds, one in 38, one in 41, etc., up to the two slowest who used 117 seconds. But it was decided to find out *how well* the children would know the combinations after ten days' more drill during the ordinary program periods. The second column in Chart II seems to say that they know them better because they had more complete control of them in reproduction. First, the median was lowered from 76 to 57 seconds, and, secondly, the range was

lowered from 84 to 62 seconds. These facts are shown graphically in Chart IV.

In short, every child is not a little modern Columbus when he begins a so-called *new* unit of school work. The waters which he is about to traverse may be the same in kind and different only in

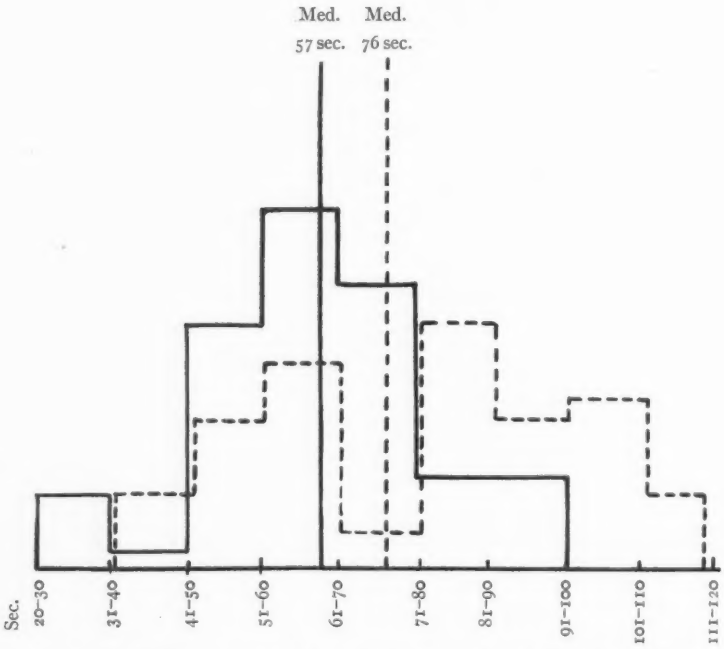

CHART IV.—Ten days' results. Decrease in time required to give forty-five number combinations to forty-seven 2A children.

Heavy line = Second test. Dotted line = First test.

degree. They may be but a connecting strait leading from land-locked bays of previous knowledge out into the big ocean of a wider, more man-like experience. The teacher's function is that of pilot. He must know the geography of child mind.

READING IN THE MT. VERNON (INDIANA) CITY SCHOOLS

SUPERINTENDENT E. J. LLEWELYN
Mt. Vernon, Indiana

I. PRIMARY

The reading work in the primary grades is done as well in the Mt. Vernon city schools as it is in most cities of its size and better than in some. The teachers feel that they have solved the reading problem in the first three grades. A total of eighteen to twenty different readers have been covered by the time the pupils have completed Grade IIIA.

II. THE PROBLEM STATED

The greatest problem in reading for several years past has been in Grades IV, V, and VI. According to statistics which were worked out, it was found that the poorest reading done in the city schools was in these grades. Especially was this noticeable among the boys.

The children read orally very poorly, but seemed to be able to understand fairly well what they read silently.

III. A SOLUTION ATTEMPTED

In one of the addresses given last fall at the Indiana State Teachers Association, it was suggested that pupils of Grades IV, V, and VI are beginning to think more rapidly than they are able to articulate words; the oral reading of children of these grades is therefore poorly done. It was also suggested that, in view of the fact that most of the reading done by adults is silent reading, it would be better to emphasize more strongly silent reading in these grades and to place less stress on oral reading.

In pursuance of these suggestions, a meeting of all teachers who teach reading in the city schools was called on November 1, 1915,

at which the reading problem was fully discussed. It was resolved to change the plan of teaching reading in Grades IV, V, and VI so as to conform to the suggestions referred to above.

IV. PLANS OF PROCEDURE

The following procedure was determined upon, and the reading work in the grades mentioned has been done along this line since November 1, 1915:

First, oral reading was to be required two or three times per week in Grades IV, V, and VI instead of five times per week as had been the former practice. It was decided that selections assigned for oral reading should have a definite value to the children. In other words, the children were not to be asked to read just for the mere sake of reading aloud. A definite motive for the reading was to be assigned, such as a beautiful description of a landscape, conversations between characters, etc. The purpose of this plan was so to motivate the oral reading as to remove, as far as possible, self-consciousness from the child and to supply him with a real purpose for reading. The teachers realized that a much more thorough preparation of the lesson would be necessary on their part to carry out this plan successfully.

Secondly, it was further decided to supply motivation for study and for interpretation of the printed page by means of questions and suggestions given by the teacher either orally or written upon the blackboard. This plan was to be followed on the days when children were not to be asked to read orally. The children were told that they would find the answers to the questions in the reading-lesson assigned. This was done to supply real motivated work for the reading study-period—a period which is often wasted under the old method of teaching reading. The children were to be held absolutely responsible individually for having definitely and accurately interpreted the printed page.

Thirdly, in taking up this new measure, the teachers felt that a big problem would be the recitation period proper, since oral reading was to be dispensed with three times per week. It was resolved to spend the time of the regular recitation period in discussing the questions or suggestions which had been assigned and thereby to

determine whether or not the children had grasped the thought during the study-period. Other supplemental questions were to be asked and the time of the regular recitation period was to be devoted to interesting, living, vital discussion. In some instances, the plan was to spend the time of the regular recitation period in having the children write the answers to questions which the teacher would write on the board. It was thought wise to keep interest at a high pitch.

Fourthly, further to stimulate the work in reading, and with the thought that children should be encouraged to read a large amount, the children were to be urged to read a large number of books from the public library, the understanding being that the books read were to be approved by the teacher and the librarian. Successfully to carry out this part of the plan, the book committee of the public library was asked to buy a large number of books suitable for pupils of the fourth, fifth, and sixth grades. To this request the library board willingly responded and several hundred volumes of suitable books were placed on the shelves of the public library. The teachers realized that in undertaking this part of the plan they would be forced to read a large number of books which they otherwise would not have read.

Fifthly, it was decided to have occasional reviews of entire books or selections to be given in the class and to be followed by a general discussion. It was deemed best to have two or more pupils read the same book or selections, so that each of them might take part in the discussion and so that teachers might discern the differences in interpretation. Careful study of the reading ability, home training, sex, etc., of the various children in approving books or selections for reading or study was determined upon. In other words, each child was to be assigned a selection suitable for him or her as far as the librarian and teacher were able to determine.

V. RESULTS

Although this scheme of teaching reading in Grades IV, V, and VI has been in operation only four months, and although it has been tried by teachers who had never used this method of teaching

reading, the results have already become noticeable. A summary follows:

1. The children have come to love the reading period. (Formerly they seemed to dread it and to come to this period with a lifeless attitude.)

2. The questions and suggestions given in advance by the teachers have caused them to make a more definite advance preparation and for this reason they have become more efficient in their teaching of reading.

3. A large number of books from the public library have been read. (It has become necessary to place an extra table in each room so that the children may have a place to keep the library books.) Many children who never before were seen in the public library have become regular visitors.

4. We do not feel that our oral reading has become any better, or at least much better; however, the time which was formerly lost, or worse than lost, in the teaching of oral reading five days per week, is being saved for the pupils. The present VIB class will have read at least ten times as much reading matter as the VIB class of one year ago.

5. It is too early to say what the influence on the seventh grade reading will be; however, we believe that children "learn to read by reading" and we are anticipating much better work in reading in Grade VII.

6. Probably the most vital result is the renewed and stimulated interest of teachers in the subject of reading. They have been forced to become acquainted with the books available in the public library. Many of these books have been read by them and have been discussed in the classes. The teachers as well as the pupils have become regular library patrons.

VI. CLOSING STATEMENT

This work has not been carried on far enough to be judged scientifically; however, the results indicated under V show conclusively that much more reading has been done and better done than was possible under the old system. The plan is to make a comparative annual or semiannual report for a period of three

years. This will allow time for most of the children who are now in these grades to be as far advanced as Grade VIIB. The teachers are enthusiastic over the results obtained thus far. They are earnest and conscientious in their work. The reading work has been vitalized so that both teachers and pupils are glad to have the reading period come. This may not prove to be the best scheme of procedure; however, there is no possible doubt but that some plan, different from that formerly used, must be adopted in the teaching of reading in Grades IV, V, and VI.

BOOKS RECEIVED

A. S. BARNES CO., NEW YORK

Children's Songs of City Life. Words by ANNA PHILLIPS SEE, music by SIDNEY DORLON LOWE. Cloth. Pp. 63. $1.00.

Songs of Childhood. Words and music by S. EVLYN DERING. Cloth. Pp. 114. $1.20.

Primary Elements of Music. By INEZ FIELD DAMON. Cloth. Pp. 28. $0.32.

Reaching the Children. By HENRY C. KREBS. Cloth. Pp. 127. $0.50.

MILTON BRADLEY CO., SAN FRANCISCO

Hicks' Series for Atypical Children. By VINNIE C. HICKS. Sentence Games 1 and, 2 Story Books, and Word Dominoes.

GINN & CO., BOSTON

The Water Babies. By CHARLES KINGSLEY. Edited by J. H. STICKNEY. Cloth. Illustrated. Pp. 280. $0.45.

Graded Writing Textbooks, Book IV. By ALBERT W. CLARK. Paper. $0.70 per dozen.

GOVERNMENT PRINTING OFFICE, WASHINGTON

The National Gallery of Art. By RICHARD RATHBUN. Cloth. Illustrated. Pp. 189.

Annual Report of the Smithsonian Institution, 1915. Cloth. Illustrated. Pp. 544.

HOUGHTON MIFFLIN CO., BOSTON

The Education of the Ne'er-Do-Well. By WILLIAM H. DOOLEY. (Riverside Educational Monographs.) Cloth. Pp. 164. $0.60 net.

MACMILLAN, NEW YORK

Heroes of Conquest and Empire. By ETTA M. UNDERWOOD. Cloth. Illustrated. Pp. 178. $0.40.

Sex-Education. By MAURICE A. BIGELOW. Cloth. Pp. 251. $1.25.

The Way of the Hills. By E. HERSHEY SNEATH, GEORGE HODGES, and HENRY HALLAM TWEEDY. Cloth. Illustrated. Pp. 265. $0.55.

The Way of the Rivers. By E. HERSHEY SNEATH, GEORGE HODGES, and HENRY HALLAM TWEEDY. Cloth. Illustrated. Pp. 250. $0.55.

MANUAL ARTS PRESS, PEORIA

Woodwork for Secondary Schools. By IRA SAMUEL GRIFFITH. Cloth. Illustrated. Pp. 366. $1.75.

CHARLES E. MERRILL CO., NEW YORK

A City Reader for the Fourth Year. By ABBY PORTER LELAND. Cloth. Illustrated. Pp. 288. $0.56.

City Arithmetics. By WILLIAM A. BOYLAN and FLOYD R. SMITH. Grades IIIA–VB inclusive. $0.44 a copy.

THE UNIVERSITY OF CHICAGO PRESS, CHICAGO

Handwork in Religious Education. By ADDIE GRACE WARDLE. Cloth. Illustrated. Pp. 143. $1.00.